

# HOW TO KNOW WESTERN AUSTRALIAN WILDFLOWERS

## PART IIIA

W. E. BLACKALL

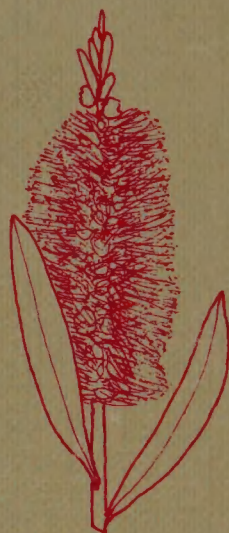
AND

B. J. GRIEVE

RESTRUCTURED AND REVISED

SECOND EDITION BY

B. J. GRIEVE





HOW TO KNOW  
WESTERN AUSTRALIAN  
WILDFLOWERS

PART IIIA







# HOW TO KNOW WESTERN AUSTRALIAN WILDFLOWERS

A KEY TO THE FLORA OF THE EXTRATROPICAL  
REGIONS OF WESTERN AUSTRALIA

## PART IIIA

W. E. BLACKALL AND B. J. GRIEVE

RESTRUCTURED AND REVISED  
SECOND EDITION BY  
B. J. GRIEVE

With assistance from Mrs E. M. Bennett, MSc



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## DEDICATION

This volume, published in the year of the sesquicentennial anniversary of the founding of the State of Western Australia, is dedicated to all those people who, commencing with original settlers such as James Drummond (*Parmelia*, 1829) and Georgiana Molloy (*Warrior*, 1830), have over the years been interested in learning to know their native plants.





# Contents

<i>Dedication</i>	[5]
<i>Preface</i>	[13]
<i>Acknowledgements</i>	[15]
<i>Reflections upon the occasion of the 25th anniversary of publication of</i> How to Know Western Australian Wildflowers	[17]
<i>Map showing the botanical districts to which the key applies</i>	[20-1]

## KEY TO THE FLORA

### DICOTYLEDONEAE (MAGNOLIATAE)

Myrtaceae	1
Onagraceae	238
Haloragaceae	242
Apiaceae (Umbelliferae)	261
<i>Colour plates</i>	<i>follow</i> 296
<i>Glossary</i>	[27]
<i>Bibliography</i>	[29]
<i>Index of vernacular names</i>	[33]
<i>Index of scientific names</i>	[37]
<i>Names of authors</i>	[49]
Blank pages for field notes:	6
Endpapers (back) : horizontal and vertical scales	





## Colour Plates

These books with illustrations are precious. If it is only a drawing 'tis well, if it  
a coloured one 'tis better still. How much trouble it saves us.

BERSOT, Paris 1882

(Cited in Bonnier's *Name this Flower*)

(Follow p. 296)

	<u>Families and species</u>	<u>Vernacular name</u>	<u>Photographed by</u>
I	MYRTACEAE		
	<i>Actinodium cunninghamii</i>	Swamp Daisy	F. W. Humphreys
	<i>Darwinia macrostegia</i>	Mondurup Bell	" "
	<i>D. meeboldii</i>	Cranbrook Bell	Marion Blackwell
	<i>D. carnea</i>	Mogumber Bell	F. W. Humphreys
	<i>D. oldfieldii</i>		" "
	<i>D. neildiana</i>	Fringed Bell	" "
	<i>D. collina</i>	Bluff Knoll Bell	" "
II	<i>Chamelaucium confertiflorum</i>		G. Keighery
	<i>C. drummondii</i>		F. W. Humphreys
	<i>C. megalopetalum</i>	Large Waxflower	" "
	<i>Verticordia spicata</i>	Spiked Featherflower	" "
	<i>V. grandis</i>	Scarlet Featherflower	" "
	<i>V. ovalifolia</i>		" "
	<i>V. nitens</i>	Morrison Featherflower	" "
	<i>V. brownii</i>	Common Cauliflower	" "
III	<i>Verticordia picta</i>	Painted Featherflower	Magda Wittwer
	<i>V. huegelii</i>	Variegated Featherflower	B. J. Grieve
	<i>V. oculata</i>		F. W. Humphreys
	<i>V. mitchelliana</i>	Rapier Featherflower	" "
	<i>V. chrysostachys</i>		" "
	<i>V. preissii</i>		" "
	<i>V. penicillaris</i>		" "
	<i>Thryptomene australis</i>	Hook-leaf Thryptomene	J. W. Green
IV	<i>Verticordia chrysantha</i>		Magda Wittwer
	<i>V. muellerana</i>		F. W. Humphreys
	<i>Calytrix fraseri</i>	Pink Summer Calytrix	Marion Blackwell

	<i>Calytrix glutinosa</i>		F. W. Humphreys
	<i>C. superba</i>	Superb Starflower	" "
	<i>C. decandra</i>	Pink Starflower	" "
	<i>C. aurea</i>	Golden Starflower	" "
	<i>C. strigosa</i>		B. J. Grieve
V	<i>Pileanthus peduncularis</i>	Coppercups	F. W. Humphreys
	<i>Lhotskya acutifolia</i>		" "
	<i>L. purpurea</i>		" "
	<i>Calythopsis aurea</i>		" "
	<i>Baeckea crispiflora</i>		Marion Blackwell
	<i>B. behrii</i>	Broom Baeckea	M. Trudgeon
	<i>B. camphorosmae</i>	Camphor Myrtle	F. W. Humphreys
	<i>Scholtzia involucrata</i>	Spiked Scholtzia	" "
	<i>S. uberiflora</i>		" "
VI	<i>Wehlia thryptomenoides</i>		F. W. Humphreys
	<i>Hypocalymma angustifolium</i>	White Myrtle	B. J. Grieve
	<i>H. robustum</i>	Swan River Myrtle	Marion Blackwell
	<i>Astartea fascicularis</i>		M. Trudgeon
	<i>Balaustion pulcherrimum</i>	Native Pomegranate	F. W. Humphreys
	<i>Agonis flexuosa</i>	W. Aust. Peppermint or Willow Myrtle	" "
	<i>A. juniperina</i>	White Cedar or Wattie	" "
	<i>A. obtusissima</i>		" "
VII	<i>Kunzea baxteri</i>	Baxter's Kunzea	F. W. Humphreys
	<i>K. pulchella</i>	Granite Kunzea	Magda Wittwer
	<i>K. recurva</i>		F. W. Humphreys
	<i>Leptospermum firmum</i>		" "
	<i>L. laevigatum</i>	Coast Teatree	" "
	<i>Callistemon phoeniceus</i>	Lesser Bottlebrush	" "
	<i>C. speciosus</i>	Albany Bottlebrush	" "
	<i>Lamarchea hakeifolia</i>		" "
	<i>Melaleuca acuminata</i>		" "
VIII	<i>Melaleuca ciliosa</i>		F. W. Humphreys
	<i>M. conothamnoides</i>		" "
	<i>M. globifera</i>		" "
	<i>M. elliptica</i>	Granite Bottlebrush	" "
	<i>M. cardiophylla</i>	Tangling Melaleuca	" "
	<i>M. coccinea</i>	Goldfields Bottlebrush	Marion Blackwell
	<i>M. cordata</i>		F. W. Humphreys
	<i>M. concreta</i>		" "
	<i>M. fulgens</i>	Scarlet Honey-myrtle	" "

IX	<i>Melaleuca megacephala</i>		F. W. Humphreys
	<i>M. pulchella</i>	Claw Honey-myrtle	" "
	<i>M. scabra</i>	Rough Honey-myrtle	" "
	<i>M. depauperata</i>		" "
	<i>M. spicigera</i>		" "
	<i>M. huegelii</i>	Chenille Honey-myrtle	" "
	<i>M. nematophylla</i>	Wiry Honey-myrtle	" "
	<i>M. pungens</i>		" "
	<i>M. lateriflora</i>		" "
X	<i>Melaleuca steedmanii</i>		F. W. Humphreys
	<i>M. violacea</i>		" "
	<i>M. undulata</i>	Hidden Honey-myrtle	" "
	<i>M. urceolaris</i>		" "
	<i>M. viminea</i>		" "
	<i>M. suberosa</i>	Corky Honey-myrtle	" "
	<i>Conothamnus trinervis</i>		" "
	<i>Beaufortia decussata</i>	Gravel Bottlebrush	" "
	<i>B. elegans</i>		" "
XI	<i>Beaufortia sparsa</i>	Swamp Bottlebrush	B. J. Grieve
	<i>B. squarrosa</i>	Sand-heath Bottlebrush	F. W. Humphreys
	<i>B. incana</i>		" "
	<i>B. orbifolia</i>	Ravensthorpe Bottlebrush	" "
	<i>Regelia ciliata</i>		B. J. Grieve
	<i>R. velutina</i>	Large or Barrens Regelia	Evelyn Humphreys
	<i>Phymatocarpus porphyrocephalus</i>		F. W. Humphreys
	<i>Eremaea ebracteata</i>		" "
	<i>E. violacea</i>	Violet Eremaea	" "
XII	<i>Calothamnus sanguineus</i>		Marion Blackwell
	<i>C. gracilis</i>		F. W. Humphreys
	<i>C. homalophyllus</i>	Murchison Clawflower	" "
	<i>C. torulosus</i>		" "
	<i>C. longissimus</i>		" "
	<i>C. gilesii</i>		" "
	<i>C. quadrifidus</i>	One-sided Bottlebrush	B. J. Grieve
	<i>Eucalyptus caesia</i>	Gungurru	F. W. Humphreys
	<i>E. celastroides</i>	Mirret	" "
XIII	<i>Eucalyptus gardneri</i>	Blue Mallet	F. W. Humphreys
	<i>E. macrocarpa</i>	Mottlecah	B. J. Grieve
	<i>E. calycogona</i>	Gooseberry Mallee	F. W. Humphreys
	<i>E. annulata</i>	Open-fruited Mallee	" "
	<i>E. platypus</i>	Moort	" "



	<i>Eucalyptus desmondensis</i>	Desmond Mallee	F. W. Humphreys
	<i>E. decurva</i>	Slender Mallee	" "
	<i>E. calophylla</i>	Marri	Marion Blackwell
XIV	<i>Eucalyptus ficifolia</i>	Red-flowering Gum	Marion Blackwell
	<i>E. woodwardii</i>	Lemon-flowered Gum	F. W. Humphreys
	<i>E. kingsmillii</i>	Kingsmill's Mallee	" "
	<i>E. stowardii</i>	Fluted-horn Mallee or Stoward's Mallee	Evelyn Humphreys
	<i>E. lehmannii</i>	Bushy Yate	Marion Blackwell
	<i>E. websterana</i>	Webster's Mallee	Magda Wittwer
	<i>E. spathulata</i>		F. W. Humphreys
	<i>E. erythrocorys</i>	Illyarrie	" "
XV	<i>Eucalyptus rhodantha</i>	Rose Mallee	F. W. Humphreys
	<i>E. preissiana</i>	Bell-fruited Mallee	" "
	<i>E. staeri</i>	Albany Blackbutt	" "
	<i>E. tetraptera</i>	Four-winged Mallee	" "
	<i>E. youngiana</i>	Large-fruited Mallee	Marion Blackwell
	<i>E. grossa</i>	Coarse-leaved Mallee	F. W. Humphreys
	<i>E. flocktoniae</i>	Merrit	" "
	<i>E. transcontinentalis</i>	Redwood or Boongul	" "
XVI	ONAGRACEAE		
	<i>Oenothera drummondii</i>	Coastal Evening Primrose	F. W. Humphreys
	HALORAGACEAE		
	<i>Glischrocaryon aureum</i>	Common Pop-flower	" "
	UMBELLIFERAE		
	<i>Xanthosia rotundifolia</i>	Southern Cross	" "
	<i>X. tomentosa</i>		" "
	<i>Actinotus leucocephalus</i>	Flannel Flower	" "
	<i>Trachymene caerulea</i>	Blue Lace Flower	" "
	<i>Eryngium rostratum</i>	Blue Devil	B. J. Grieve
	<i>Platysace xerophila</i>		F. W. Humphreys

## Preface

Progress in taxonomy and biology in general is closely linked with identification.  
To teach botany (and ecology in particular) in a country without a practical  
Flora must be a thankless task.

DAVIS AND HEYWARD 1963

Although there is still no modern Flora of Western Australia in the accepted sense, the gradual completion and publication of the late Dr Blackall's illustrated 'Key to the Flora', covering the more south-western portion of the State, has tended to minimize the earlier frustrations experienced by teachers of botany suggested in the latter part of the above quotation.

However for a 'practical Flora' to be relevant in relation to the first part of the statement it must of course be up-to-date.

Since, apart from Part IV for the 'Key to the Flora' this is not the case, an overall revision was desirable. For a variety of reasons, not least of which was that it offered the opportunity of transferring the large family Myrtaceae from Part I to its correct position, as well as providing continuity with the most recently published part, it was decided to commence the revision with Part III. The extent even of this part of the revision may however be appreciated from the fact that although the 15 families in the original Part III had been worked up and published as late as 1965, several of them have in the meantime undergone monographic treatment and new genera and many new species have been described. For the family Myrtaceae, with its 29 genera in South-Western Australia, which was published in Part I in 1954 essentially as Dr Blackall had left it in 1939/40, the degree of change may be gauged from the fact that in the genus *Eucalyptus* alone over 50 new species occurring within the area covered by the Key have been described.

By the time the restructuring and revision of the families involved was nearing completion it had become apparent that because of the new additions and other changes, the size of the new Part III would make it too cumbersome for field use. A decision was then taken with University Press to present it in two parts.

The publication of Part IIIA should be followed fairly quickly by that of Part IIIB.

In these two parts 20 families, 137 genera and 1167 species (with 134 subspecies and varieties) are treated. As well as the reading of descriptions and the illustrating of new species, the revision has involved a review of the earlier original descriptions, checking against the types or authenticated specimens, making new drawings (as well as often redrawing or modifying the old) to illustrate habit and floristic or structural features and remaking or modifying keys .

By an increased use of scripted legends to the drawings, together with the addition of printed notes on habit and flowering times, the inclusion of a greater amount of basic botanical detail has been possible. Also, whereas in preceding parts distributions of species culled from original descriptions and other accounts in the literature and from authenticated specimens in Australian or British herbaria had been included with the Index of Scientific Names, here they are more appropriately placed in the text. Again, since the botanical districts to which they had been referred were very large in extent, and their boundaries subject to change in the light of newer researches, it was decided to list representative collection localities (including in many cases that specified for the type species). It should of course be emphasized that the collection locations supplied do not necessarily represent a complete distribution picture within a given botanical district.

Authorities for the currently-used scientific names, together with synonyms where considered helpful, are given, as before, in the Index. The General Classification and Key to the Families has however been omitted as it may be consulted in Part IV. For the Glossary only new or redefined terms used are given.



## Acknowledgements

This revision has largely been made possible through the appointment of the author as an Honorary Research Fellow by the Senate of the University of Western Australia, by the provision of research facilities in the Botany Department and use of the University Botany Herbarium through the courtesy of Professor J. S. Pate, and by access being facilitated to the Blackall collection and to the overall Western Australian Herbarium collections by Dr J. Green, Curator of the Western Australian Herbarium.

The continuing support of the work on the 'Key to the Flora' by the Australian Biological Resources Study Committee has not only allowed the completion of the present parts IIIA and IIIB (in a considerably shorter time than would otherwise have been the case) through the provision of part-time graduate research assistant help, but also has greatly assisted the revision by the funding of study visits to interstate herbaria and to the herbaria of the Royal Botanic Gardens, Kew and British Museum (Natural History), London, where many Western Australian type-specimens and early collections are housed.

It is a pleasure to acknowledge the highly valuable assistance of Mrs E. M. Bennett, formerly of the Western Australian Herbarium, who acted as Graduate Research Assistant during the period of revision of Parts IIIA and IIIB. She was very helpful in relation to the Myrtaceae and particularly for the genera *Melaleuca* and *Eucalyptus*, as well as other groups. She was also responsible for much of the scripting of the legends and for many flower drawings.

Many botanists have assisted with critical discussions and advice regarding the presentation of matters in this updating.

Members of the staff of the Western Australian Herbarium have been particularly helpful. Dr J. Green (Curator) advised on treatment of the myrtaceous genera *Thryptomene* and *Micromyrtus* and made available for examination many type-specimens of these which he had on loan from other herbaria. It is regretted that this part could not await the publication of the new myrtaceous genus he is describing.

Mr P. Wilson (Senior Botanist) gave generously of his time and expertise in matters relating to nomenclature and the tracing of literature references. Also while on a short and busy visit to Kew Herbarium he found time to provide notes, sketches and photographs of several type species on which the author needed information.

Mr A. George, Dr N. Marchant, Mrs G. Perry, Mr K. Kenneally and Mr M. Trudgeon also made many helpful suggestions regarding genera they are monographing, and made available type-specimens or photographs of these. The extent of their help is indicated by the frequent occurrence of 'personal communication' notes in the text.

Australian Botanical Liaison Officers at Kew Herbarium, in particular Dr A. Kanis (Canberra, Herbarium Australiense) and Mr B. Maslin (Western Australian Herbarium), were also most helpful in forwarding detailed information regarding particular type-species.

Mr G. Smith, Curator of the University of Western Australia Botany Herbarium, facilitated examination of the specimens there, and was also helpful in searching for original descriptions.

Dr P. Wycherley, Director of King's Park and Botanic Gardens, together with botanical members of his staff supplied living plant material for study as well as providing access to the King's Park working herbarium. Mr G. Keighery also advised regarding the Apiaceae.

Members of staff and research students at Adelaide Botanic Gardens, studying genera which are also represented in Western Australia, kindly made available details of new species while their manuscripts were still in press. In this connection I am indebted to Dr A. Munir, the late Mr J. Carrick and to Mr P. Short.

Mention must also be made of the generous help afforded by the directors and staff members of State Herbaria at Melbourne and Adelaide and by those of the Royal Botanic Gardens Herbarium, Kew and British Museum (Natural History) in London.

Mrs E. Humphreys has again as for Part IV provided most of the colour photographs selected from the unique collection of her late husband and from her own. These show to advantage the habit and floristic detail necessary for quick recognition of these species. A reviewer commented that the colour photographs in Part IV were superb and those included here may well merit a similar accolade. Mention is made in another place of the financial help for publication of the colour photographs provided by Mrs Humphreys and by the Wildflower Society of Western Australia.

It is a pleasure to express appreciation of the co-operation and assistance given by the Manager (Mr V. Greaves) and staff of the University of Western Australia Press and in particular by Mr F. Brodalka, who as Editor, masterminded the complicated processes involved in the presentation, printing and production of this work. He was responsible for the original and aesthetically pleasing cover design for this part as well as that for the preceding Part IV. The help also of Mrs K. Dell, BSc, who has assisted with the complicated page-proofing and final checking is greatly appreciated.

Finally I would like to thank my wife for her understanding and co-operation over the long period of this still continuing 'Blackall Saga'.

BRIAN GRIEVE  
*Emeritus Professor*

## Reflections

upon the occasion of the 25th anniversary of the publication of  
*How to Know Western Australian Wildflowers*

Botany is one of the most deceitful sciences. As flowers are so charming one imagines that it must also be charming; but how soon one is disillusioned! . . . How many times have I tried to become a botanist and each time I have been vanquished.

So wrote the philosopher Bersot at the Sorbonne in Paris in 1882. But he did go on to suggest that it ought to be possible for the botanical savants to devise a scheme of recognition of plants through plainly visible, marked, and always united main characteristics, combined with suitable illustrations.

Three decades later Gaston Bonnier, Professor of Botany at the Sorbonne, took up his challenge and produced that benchmark book *Name this Flower—The Simple Way*. In the introduction to this he describes his early difficulties due to the mental blinkers imposed by his long and formal study of systematic botany, and how he finally overcame these and made the attempt to translate the botanical characteristics, of which a trained botanist makes use without conscious thought, into language simple enough for a layman to understand. The reception given to his book in Europe indicated that he had indeed succeeded in making it easy for those who have not made any preliminary study of botany, to find out the names of plants.

The late Dr Blackall, whether he was ever aware of Bonnier's book or not, developed a rather similar approach which he applied to identifying Western Australian plants. A series of paintings of native plants by him has recently come to light from the archives of the Western Australian Herbarium. These were painted in his spare time mainly while he held the post of medical officer at the Fremantle Asylum from 1904-1910. Apart from demonstrating his artistic skill, these paintings also show his keenly-developed powers of observation. Most of the paintings include, in addition to the habit of the plant, detailed and carefully labelled drawings illustrating characteristic floristic and structural features. They foreshadow the technique which he was later to refine and apply in conjunction with dichotomous keys in developing his Key to the Flora.

There appears to be no clear record as to when Dr Blackall actually commenced active work on the flora identification project but it was probably well under way by the late 1920s. By the early 1930s, as the demands of his medical practice diminished (in 1931 he took in first one and later in 1935 a second partner), he was giving increasing time to collecting in his specially fitted-out caravan and working on the keys and illustrative drawings and diagrams. From internal evidence it is apparent that at this time as well as using Bentham's *Flora Australiensis*, Dr Blackall

was also applying his knowledge of botanical Latin and of German by the incorporation of information from Lehmann's *Plantae Preissianae*, Mueller's *Fragmenta Phytographiae Australiae*, and Diels and Pritzel's *Fragmenta Phytographiae Australiae Occidentalis*. Greatly stimulated by a study visit in 1935 to the Royal Botanic Gardens Herbarium at Kew where he checked many of his identifications, he worked with increasing intensity on his project, until it became what his wife was to call a 'tyranny of labour'. Unfortunately he was unable to complete it before he died in 1941. After his death Dr Blackall's extensive herbarium (comprising nearly 5000 sheets) together with his collecting notebooks and the paintings of native plants referred to earlier, were given to the State. Only the actual rough manuscripts and the fair-copy completed part were retained by his family. Apparently it had been thought that it might be possible for the Key to the Flora to be taken over and completed by his co-collector and friend C. A. Gardner,



the government botanist. He however was committed to completion of the *State Flora*, and so Dr Blackall's work lay fallow for several years. Some time after the author's appointment to the Botany Department in the University of Western Australia, and when due to lack of a modern State flora he had begun to sense something of the feeling of frustration that Davis and Heyward were later to mention in another context (see Preface), he was contacted by members of the Blackall family and shown the partly completed manuscript. Being greatly impressed with the originality and potential importance for students of the illustrated keys and learning that the government botanist was still unable to work on them, he suggested they be given to the University and then was later requested by the Senate to complete the work. Because of the desirability of publishing fairly quickly the first part of the Key, which had

been largely completed by Dr Blackall, only a limited attempt could be made to update the main body of the text of this part. The reproduction of the fair-copy manuscript in book form required the use of a photographic process so that the scripted Keys and drawings could be reduced to  $\pm$  half size. This raised problems of clarity in the original manuscript and necessitated a considerable amount of rescripting which was carried out most competently by (the now late) Dr N. H. Speck and Miss J. Rayner of the Botany Department. It was published by University Press in 1954 under its now well known title of which it was felt Dr Blackall would have approved.



The completion of Part II followed fairly quickly, largely due to the author's becoming eligible for a year's study leave which enabled him to devote considerably more time to it, and it was published in 1956. Part III however, due to the greatly increased amount of research necessitated by the continuing lack of a State flora, together with the author's own expanding other commitments and the breakdown of an attempt to change over to printing which necessitated the professional rescripting of the complete work, was not published until 1965. The final Part IV, in which the problems posed to the change over to printing the keys and integrating the drawings were successfully solved, and which incorporates the results of relevant taxonomic researches up to  $\pm$  1974, was published in 1975.

What perhaps needs to be emphasized now, looking at the whole in perspective after the passage of 25 years, is that Dr Blackall's dream of providing a means whereby not only students of botany but very many lay people interested in learning to know about their heritage of native wildflowers, has indeed been successfully achieved. Perhaps for myself in this connection, one of the most rewarding early experiences was to be involved in presenting wildflower identification classes arranged for Adult Education students (and for which Professor F. Alexander, perhaps with some prescience, had coined the title 'Turning over a new leaf in Botany') and to observe how quickly and with what relatively little expert help these lay people were able to 'run down', in the Blackall Keys being tested out, the wildflowers they were given.

It is to be hoped that the current revision will further extend the usefulness of the Blackall concept and that these illustrated Keys may continue to help a new generation of students and wildflower lovers to know their plants.

BRIAN GRIEVE  
*Emeritus Professor*



# Map

## The botanical districts of the extratropical regions of Western Australia

Map, on the facing page, shows the South-West Botanical Province (subdivided into 7 botanical districts), and that part of the Eremaean Botanical Province (including segments of 4 of its botanical districts) which come within the area to which the Key applies. Abbreviations are as follows:

An	Austin	Da	Darling	St	Stirling
Ash	Ashburton	Ey	Eyre	Wa	Warren
Av	Avon	Ir	Irwin	Rech Arch	Recherche Archipelago
Ca	Carnegie	Le	Lesueur	Rottn Is	Rottnest Island
Co	Coolgardie				

The letter 'C' added to those botanical districts which border the sea, delimits an area up to  $\pm 10$  km inland from the coast.

Recognized species which occur between the coast (Shark Bay to Israelite Bay) and a boundary in the Eremaea, which runs approximately from Hamelin Pool east through Meekatharra to Lake Wells, then south through Queen Victoria Spring to Israelite Bay, are keyed out.

Note: The names and extent of some of the original botanical districts have been the subject of a revision while this part was being processed for publication (see Beard 1979). The changes should not, however, present difficulties for the user of this Key, as for most of the species actual localities of occurrence are also given.





# Key to the flora

## DICOTYLEDONEAE (MAGNOLIATAE)

Myrtaceae

Onagraceae

Haloragaceae

Apiaceae (Umbelliferae)



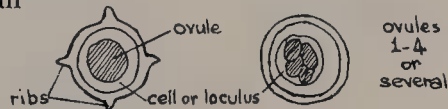
FAMILY 73  
**MYRTACEAE**

**KEY TO GENERA**

Page

**A. Ovary 1-celled, with 1 to several ovules.**

Shrubs or heath-like plants with small leaves. Fruits indehiscent, dry.

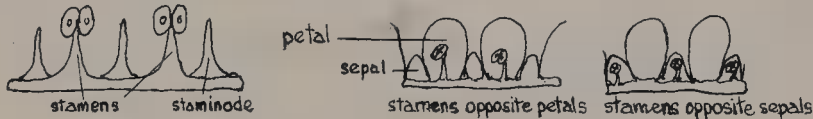


ovules  
1-4  
or  
several

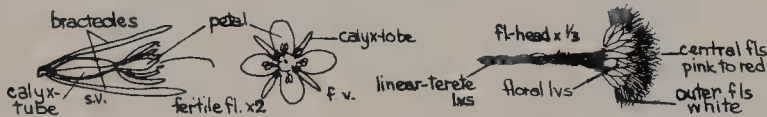
(alternate A p. 4)

**B. Stamens definite (precise or constant in number), 5-10 (20 in *Pileanthus*), with or without alternating sterile stamens (staminodes), and arranged in a single row.**

(alternate B p. 3)



**C. Flowers each with 4 calyx-lobes (sepals), 4 petals and 8 stamens crowded in a large, showy terminal, daisy-like head.**



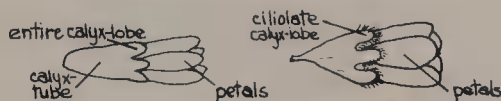
1 **ACTINODIUM** 10

**C. Flowers each with 5-10 calyx-lobes and 5 petals arranged in heads surrounded by long or short bracts, or flowers axillary and solitary, or in racemes or spikes.**



**D. Stamens 10, alternating with as many staminodes.**

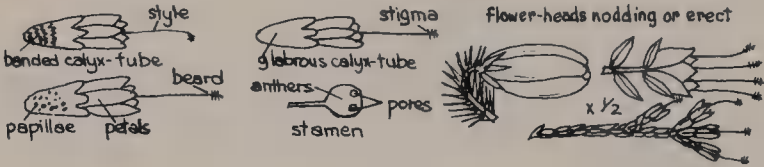
**E. Calyx-lobes 5, broad, entire or shortly ciliolate.**





F. Style much longer than petals (except in *Darwinia speciosa* and *D. forrestii*) ; anthers  $\pm$  globose, opening in terminal pores or short slits.

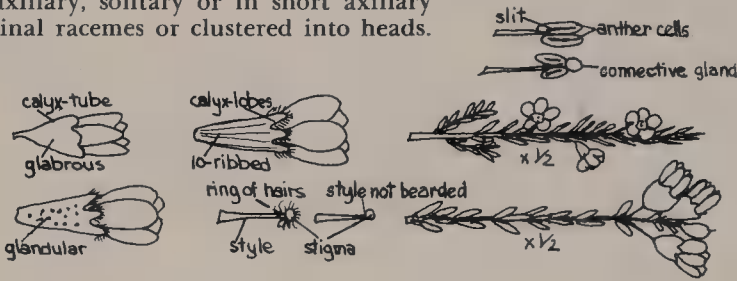
Page



2 DARWINIA

10

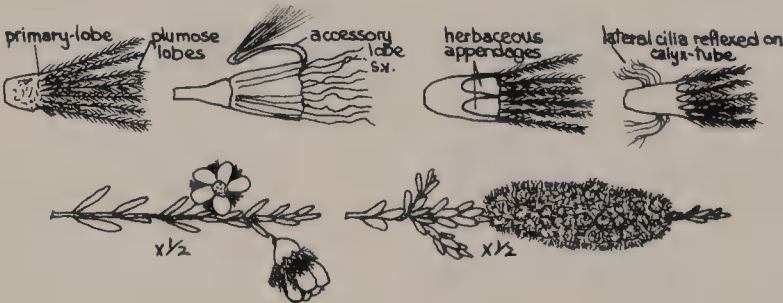
F. Style short, not longer than petals; anther-cells parallel, opening in longitudinal slits.  
Flowers axillary, solitary or in short axillary and terminal racemes or clustered into heads.



3 CHAMELAUCIUM

20

E. Calyx with 5 primary lobes, deeply divided into 7-10 plumose or hair-like lobes or segments; 5 additional accessory calyx-lobes reflexed on the calyx-tube and alternating with the primary ones, or 5 reflexed herbaceous appendages, may be present.



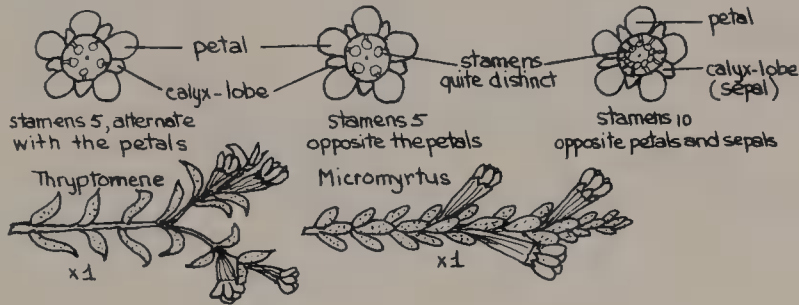
4 VERTICORDIA

25

D. Stamens 5-20, without staminodes.

E. Stamens 5-10; if 5, they are regularly alternate with or opposite to the petals; if 10, they are opposite the petals and sepals (calyx-lobes). Flowers solitary, axillary, sessile or shortly-pedicellate; calyx-lobes 5.

Heath-like glabrous shrubs.

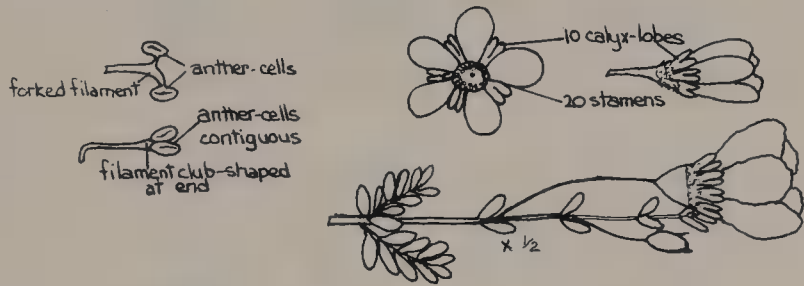


5 **THRYPTOMENE,  
MICROMYRTUS**

41

E. Stamens 20; calyx-lobes 10.

Heath-like plants.



6 **PILEANTHUS**

52

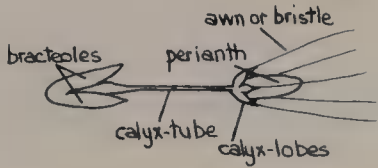
B. Stamens usually indefinite (too many to be counted easily, 25 or more) rarely definite (7-12), and arranged in several rows; no staminodes present.

C. Calyx-lobes present; petals 5.

D. Calyx-tube elongated.

E. Calyx-lobes ending in a long hair-like bristle or awn.

Heath-like, very floriferous shrubs

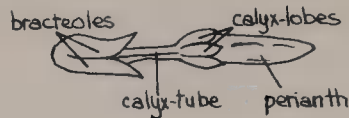


7 **CALYTRIX**

53

E. Calyx-lobes truncate, not produced into a bristle.

Heath-like shrubs.



8 **LHOTSKYA,**  
**WEHLIA**

62

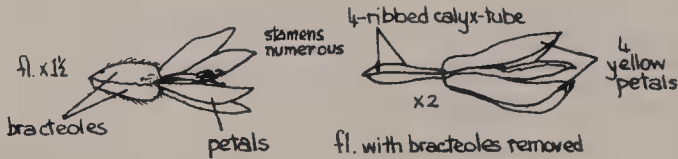
D. Calyx-tube broad, top-shaped.

5 **THRYPTOMENE**

41

C. Calyx-lobes absent; petals 4.

Ericoid shrub; flowers sessile, in terminal heads.



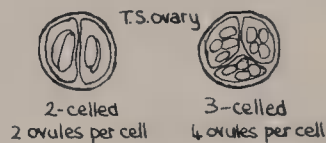
9 **CALYTHROPSIS**

66

A. Ovary 2- 5-celled (rarely more), with 1, 2, 4 or several ovules per cell.

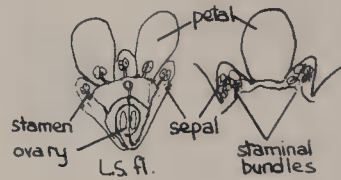
Fruit capsular, opening at the top in 2-5 valves, rarely indehiscent.

(Note. Ovary 10-celled in *Leptospermum laevigatum*.)



B. Stamens shorter than (rarely shortly exceeding) the petals, free or if united into bundles, then the bundles of stamens alternate with the petals.

Stamens definite (5-10) or indefinite (20-40).

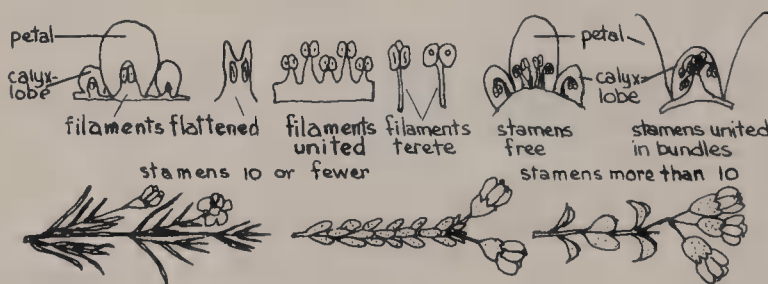


(alternate B p. 6)

C. Leaves opposite or in opposite bundles.

D. Stamens 5-25 (rarely 30-40); flowers usually small (only in 2 or 3 species are they comparable in size to those of *Hypocalymma*).

Erect or diffuse shrubs, usually with white to pink flowers.



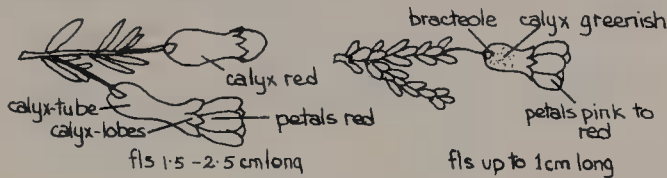
10 **ASTARTEA,**  
**BAECKEA,**  
**SCHOLTZIA**

66

- D. Stamens very numerous (30 or more);  
flowers relatively large (1-2 cm long or  
wide).

Page

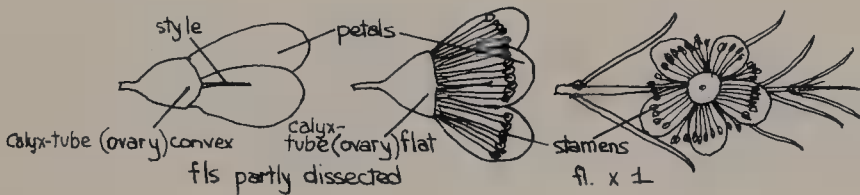
- E. Calyx-tube urn-shaped, red or green;  
petals pink to red.  
Prostrate or erect shrubs.



11 **BALAUSTION**

88

- E. Calyx-tube broadly top-shaped or almost  
flat.  
Shrubs.

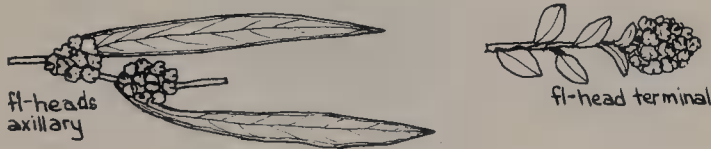


12 **HYPOCALYMMMA**

88

- C. Leaves mostly alternate, sometimes  
crowded.

- D. Flowers sessile in globular, axillary or  
terminal heads.  
Shrubs or small trees; flowers white.

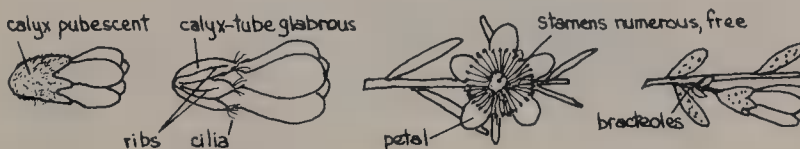


13 **AGONIS**

92

- D. Flowers solitary, sometimes rather crowded  
towards the ends of branches but not  
arranged in heads.

Shrubs up to 2 m high (2 species may grow  
to small-tree size of 3-6 m); flowers white to  
pink.

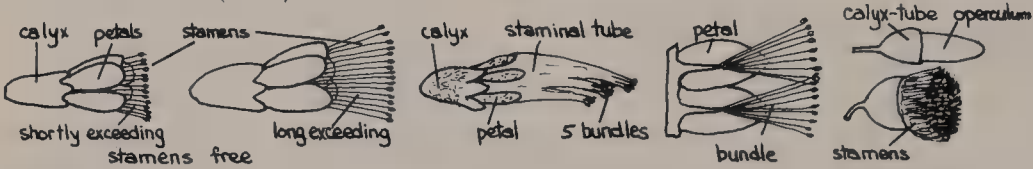


14 **LEPTOSPERMUM**

94

B. Stamens longer than the petals, free, or if united into bundles, then the bundles are opposite the petals.

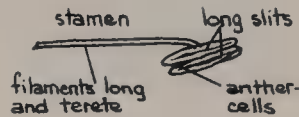
Stamens indefinite (20-30).



C. Sepals and petals not united into an operculum or cap in the bud.

(alternate C p.9)

D. Anthers versatile, cells parallel and opening longitudinally.



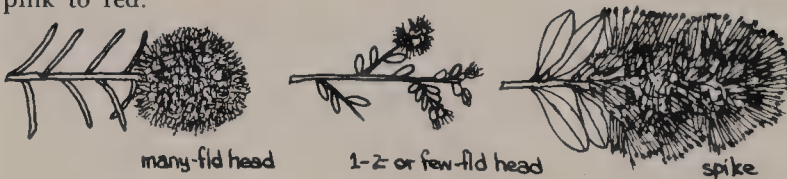
(alternate D p.7)

E. Stamens free.

(Note that in some cases (e.g. *Callistemon speciosus*) the stamens may appear to the naked eye to be shortly united into bundles, but close inspection with a lens shows that they are really free.)

F. Flowers in globular terminal heads with few (rarely 1 or 2), to several flowers, or in short dense spikes; leaves usually under 1 cm long (but may be 1-1.5 cm long in 2 species), mainly alternate.

Shrubs often heath-like; flowers yellow, blue, pink to red.

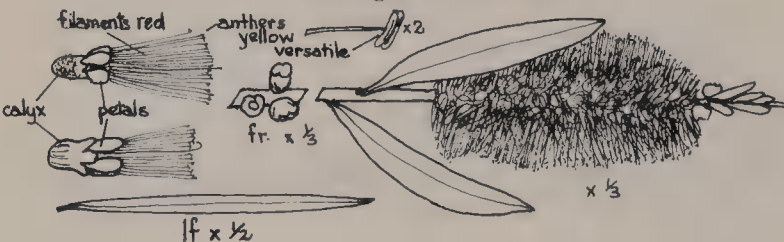


15 KUNZEA

97

F. Flowers in large dense spikes, up to 12 cm long, ending with the year's leafy shoot; leaves  $\pm$  linear-lanceolate, 3-12 cm long.

Shrubs or small trees 1-4 m high; flowers red.



16 CALLISTEMON

101

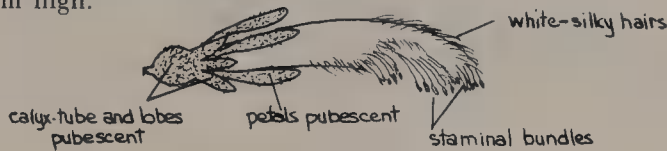
E. Stamens united in 5 bundles opposite the petals.

Page

(Note that in *Melaleuca lateritia* there may be only a loose grouping into 5 bundles.)

F. Stamens all united in a tube to at least the middle, then separating into 5 distinct bundles, each opposite a petal.

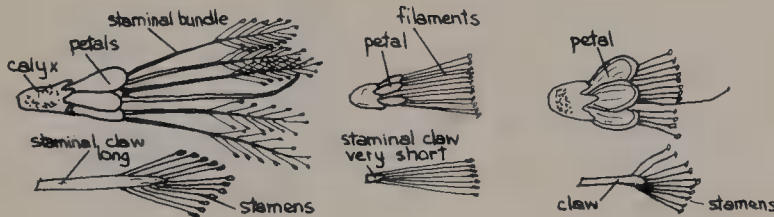
Shrubs 1-5 m high.



17 LAMARCHEA

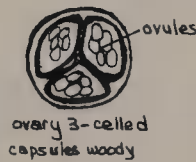
102

F. Staminal bundles distinct (or scarcely united) to the base.



G. Ovary with several ovules in each cell.

Shrubs (honey-myrtles, bottlebrushes) or trees (paperbarks) with red or yellow flowers usually in heads or spikes.

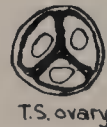
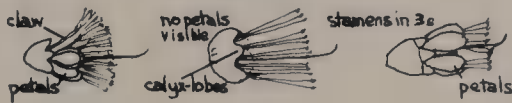


18 MELALEUCA

103

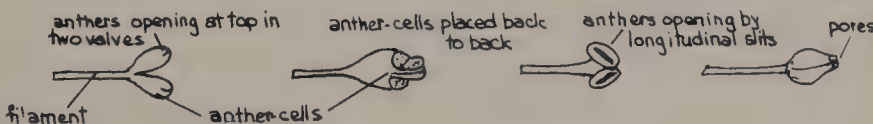
G. Ovary with a single ovule in each cell.

Shrubs with yellow flowers in globular terminal heads.



19 CONOTHAMNUS 134

D. Anthers erect attached by the base.

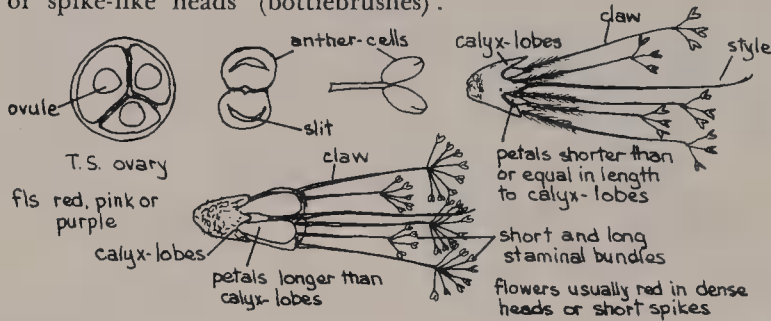




- E. Ovules 1 in each cell of ovary; anther-cells opening at the top in transverse slits; leaves opposite.

Page

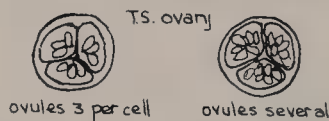
Rigid often heath-like shrubs with flowers in globular or spike-like heads (bottlebrushes).



20 **BEAUFORTIA**

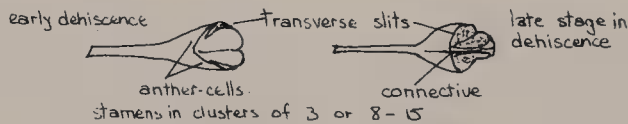
135

- E. Ovules 2-4 or several in each cell of ovary.



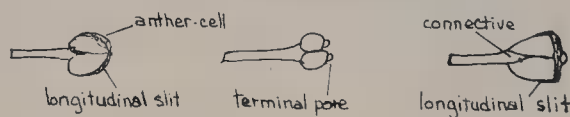
- F. Anthers opening outwards in transverse slits; anther-cells arranged back to back; leaves alternate.

Shrubs 1-3 m high with slender branches; flowers pink-purple in globular heads.



21 **PHYMATOCARPUS** 141

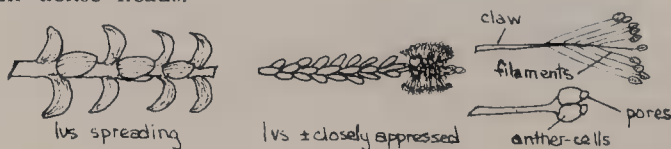
- F. Anthers erect, cells placed back to back and opening outwards in longitudinal slits or terminal pores.



- G. Leaves not above 1.5 cm long.

- H. Leaves opposite and decussate; anthers opening in slits or pores; ovules 4 per cell of ovary.

Rigid shrubs with red, pink or purple flowers in dense heads.

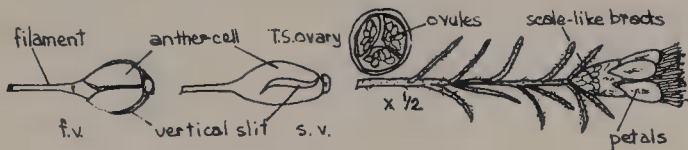


22 **REGELIA**

141

H. Leaves alternate or scattered, small;  
anthers opening in longitudinal slits  
only; several ovules per cell of ovary.  
Bushy shrubs, usually hairy; flowers  
orange-red, pink to violet, solitary or  
few.

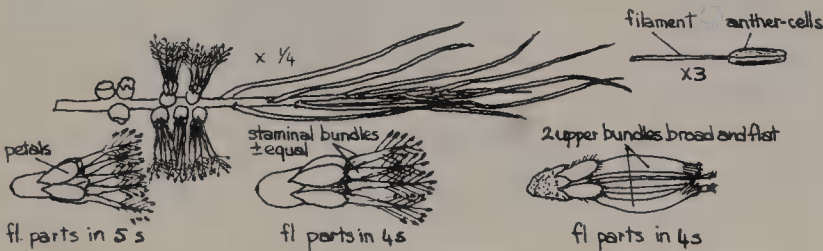
Page



23 EREMAEA

143

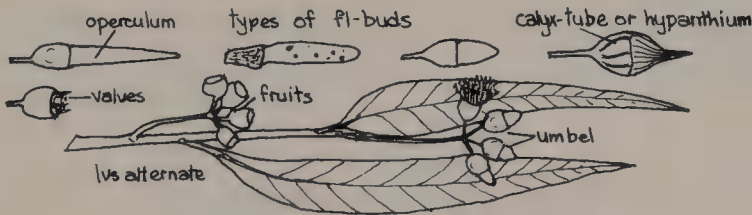
G. Leaves 2.5-25 cm long, scattered;  
flowers lateral.  
Shrubs with showy, usually red flowers  
(one-sided bottlebrushes); leaves narrow,  
rigid, terete or flat.



24 CALOTHAMNUS

146

C. Sepals and petals (where present) united  
into an operculum or cap which falls off as  
the flower opens.  
Trees (gum-trees), tall shrubs (mallees, marlocks);  
leaves usually alternate in adult stage.



25 EUCALYPTUS

155

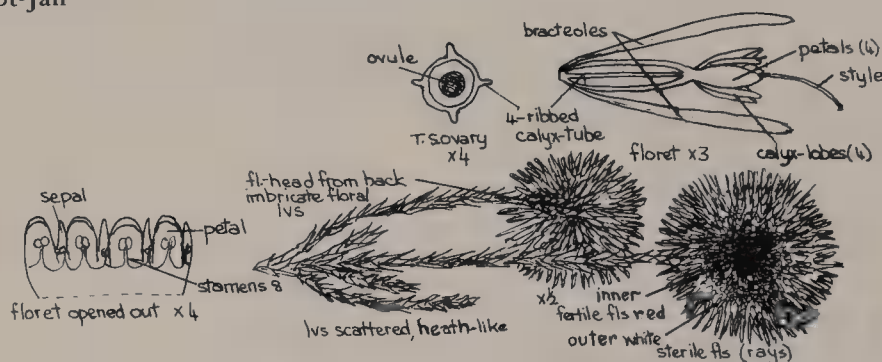
## KEY TO SPECIES

1 *Actinodium*

Habit: Erect slender glabrous shrub up to 90 cm high,  
with small heath-like leaves and showy flower-heads.

Distribn: Ey, Ey (C) (Bremer Bay area), St (Stirling  
Ra.), St (C) (Albany), Wa (s c) (Denmark area).

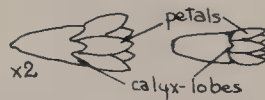
Flg: Sept-Jan



***A. cunninghamii***  
Swamp Daisy

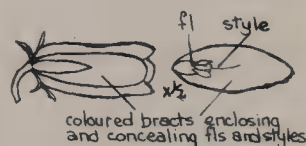
2 *Darwinia*

- A. Calyx-lobes (often minute) not exceeding half the length of the petals.



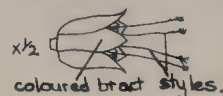
- B. Flower-heads (often nodding), surrounded by an involucre of large coloured floral leaves or bracts.

- C. Coloured bracts much longer than flowers and concealing them and their styles.



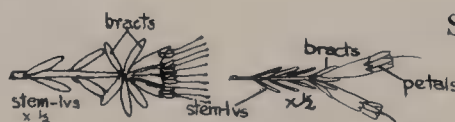
Section 1 Page 11

- C. Coloured bracts scarcely exceeding or shorter than the flowers and not concealing the styles.



Section 2 15

- B. Flower-heads (sometimes of 1 or 2 flowers only) with small floral leaves or bracts similar in size and colour to the stem-leaves.

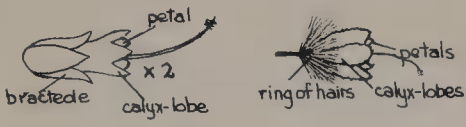


Section 3 17

A. Calyx-lobes as long as the petals or longer.

Page

Section 4 19



Section 1

A. Leaves opposite.

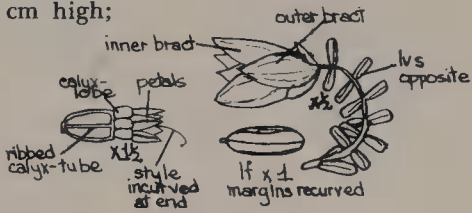
Note. *D. macrostegia* and *D. hypericifolia* sometimes have some upper leaves  $\pm$  opposite, but as most are alternate they are keyed out under the second A.

B. Calyx-tube 5-ribbed.



C. Calyx-lobes obtuse; 3 outer involucral bracts purplish-red, 3 inner ones yellowish-green.

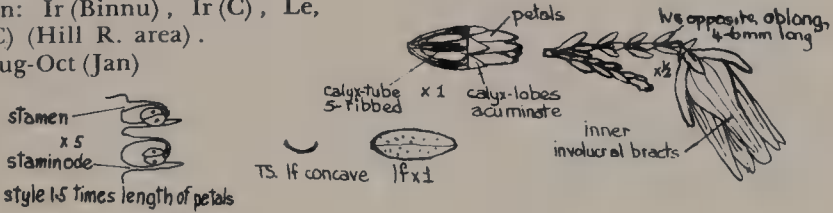
Habit: Small glabrous shrub, 20-40 cm high;  
flower-heads terminal, nodding;  
flowers usually 4 in the head.  
Distribn: Da (Red Hill, Darling  
Ra. area).  
Flg: Sept-Oct



1 *D. pimelioides*

C. Calyx-lobes acuminate; bracts dark reddish-brown.

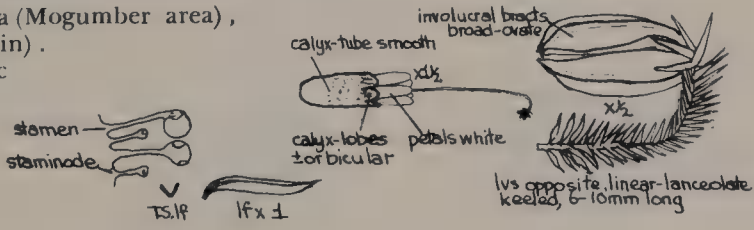
Habit: Small shrub up to 30 cm high, with  $\pm$   
erect branches; flowers usually 4 in the head,  
greenish.  
Distribn: Ir (Binnu), Ir (C), Le,  
Le (C) (Hill R. area).  
Flg: Aug-Oct (Jan)



2 *D. speciosa*

B. Calyx-tube not ribbed; involucral bracts yellowish to flesh-pink coloured.

Habit: Small shrub 20-45 cm high; flowers about  
8 in the head.  
Distribn: Da (Mogumber area),  
St (Narrogin).  
Flg: Oct-Dec



3 *D. carnea*  
Mogumber Bell

A. Leaves not strictly opposite, often crowded.

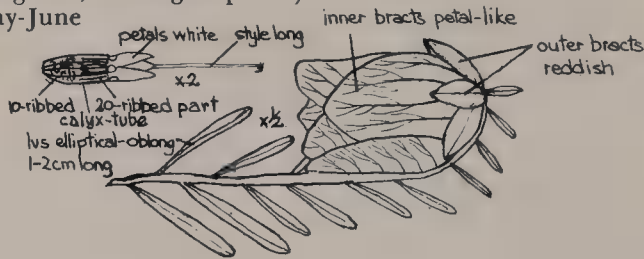
B. Leaves 1-2 cm long, obtuse with recurved margins.

C. Inner involucre bracts obovate, whitish or pale yellow, streaked with red veins; calyx-tube 10-ribbed at base.

Habit: Erect plant up to 2 m high; bells 3-4 cm long; flowers 6-8 in the head.

Distribn: St (Stirling Ra., Porongurup Ra.).

Flg: Sept-Nov, May-June



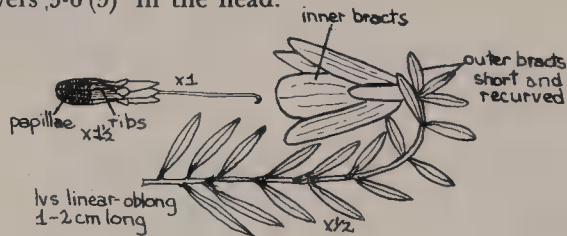
4 ***D. macrostegia***  
Mondurup Bell

C. Inner involucre bracts oblong, pink to scarlet; calyx-tube 5-ribbed.

Habit: Slender shrub up to 70 cm high; bells narrow 2-3 cm long; flowers 3-6 (5) in the head.

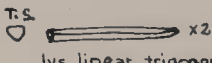
Distribn: St (Stirling Ra.).

Flg: Oct-Nov



5 ***D. hypericifolia***

B. Leaves short, 3-9 mm long (rarely 1 cm long as in *D. masonii* and *D. acerosa*).

C. Leaves linear, margins entire.  x2  
lvs linear, trigonous

(alternate C p. 14)

D. Involucre bracts entire.

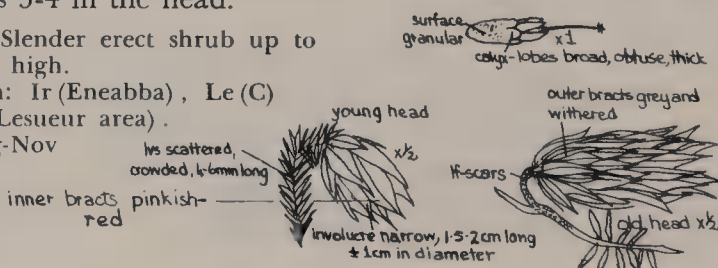
(alternate D p. 14)

E. Flowers 3-4 in the head.

Habit: Slender erect shrub up to 30 cm high.

Distribn: Ir (Eneabba), Le (C) (Mt Lesueur area).

Flg: Aug-Nov

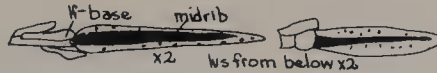


6 ***D. helichrysoides***

E. Flowers more than 4 in the head.

F. Flowers 7-15 in the head.

G. Leaves flat.



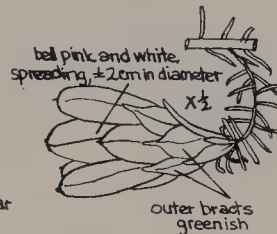
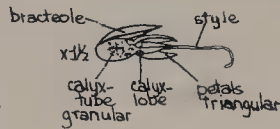
H. Outer bracts short, ovate with green leaf-like points; inner bracts becoming deep pink or red.

Habit: Heath-like shrub up to 1 m high; branches well clothed with leaves 6-8 mm long; flowers 8-10 in the head.

Distribn: St (Stirling Ra.).

Flg: Aug-Oct

Note. *Genetyllis oxylepis* (see Sc. Index under *D. leiostyla*) may prove to be a distinct species (pers. comm. N. Marchant and G. Keighery).



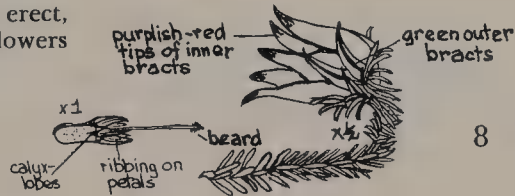
7 ***D. leiostyla***

H. Outer bracts short, green; inner bracts long, white, purplish-red towards tips.

Habit: Rigid, erect shrub 2-3 m high, with pendulous flower-heads; leaves linear, up to 9 mm long, bright green, erect, dense and persistent on stems; flowers 7-8 per head.

Distribn: St (Stirling Ra. area).

Flg: Sept-Nov



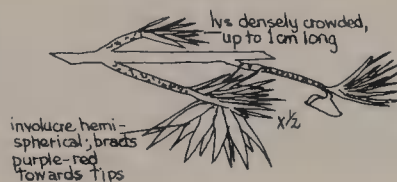
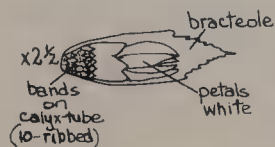
8 ***D. meeboldii***  
Cranbrook Bell

G. Leaves sub-triquetrous.

Habit: Erect shrub 1.5-2 m high; branches often bare of leaves except close to apex; flowers 12-15 per head.

Distribn: An-Ir (Mt Gibson-Perenjori).

Flg: Aug-Nov



9 ***D. masonii***

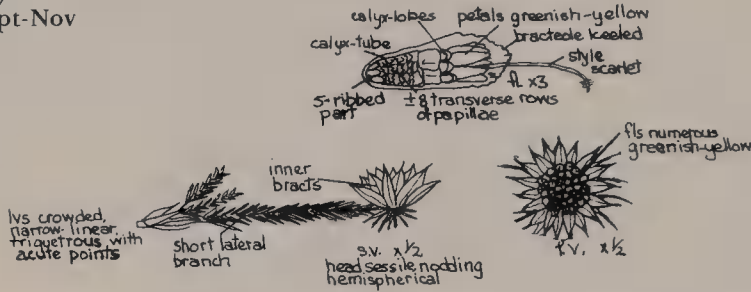


F. Flowers numerous, 20 or more in the head; bracts spreading, outer ones green with pale margins, inner ovate-lanceolate, green with purplish-red margins.

Habit: A spreading densely-branched heath-like glabrous shrub 30-45 cm high.

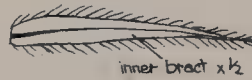
Distribn: Da (Mogumber area), Co (Nungarin).

Flg: Sept-Nov



10 ***D. acerosa***

D. Involucral bracts (inner ones) ciliate.

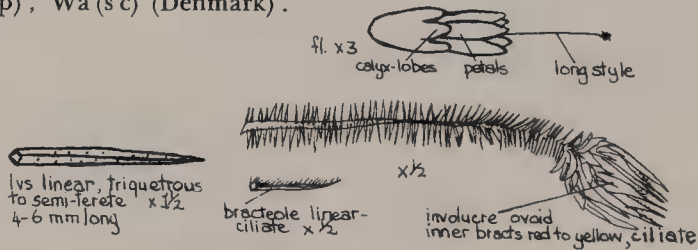


E. Calyx-lobes and petals glabrous.

Habit: Diffuse, low, much-branched shrub up to 30 cm high.

Distribn: Da, Ir (Eneabba), St (C) (Albany), Wa (Nannup), Wa (s c) (Denmark).

Flg: Oct-Dec



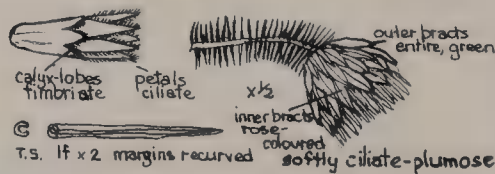
11 ***D. oederioides***

E. Calyx-lobes and petals ciliate.

Habit: Much-branched shrub, 20-60 cm high; flowers numerous in head.

Distribn: Da (Bindoon), Ir (Coorow), Ir (C), Le, Le (C).

Flg: Aug-Dec



12 ***D. neildiana***  
Fringed Bell

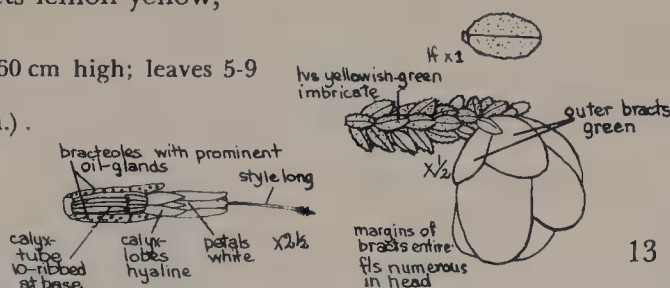
C. Leaves elliptical, margins minutely denticulate.

**D. Inner involucre bracts lemon-yellow, margins entire.**

Habit: Bushy shrub 40-60 cm high; leaves 5-9 mm long.

Distribn: St (Stirling Ra.).

Flg: Oct-Nov



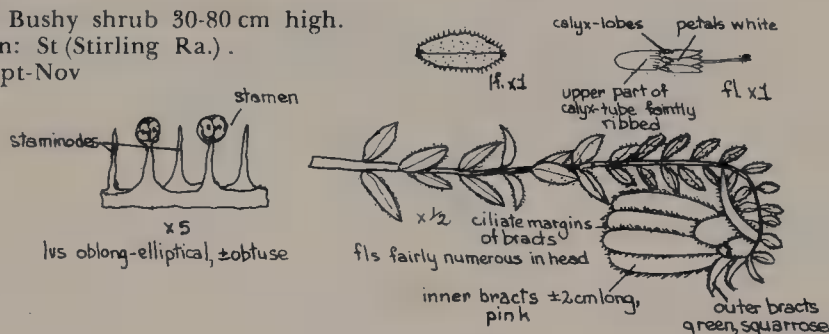
13 ***D. collina***  
Yellow  
Mountain Bell

**D. Inner involucre bracts pink, margins ciliate.**

Habit: Bushy shrub 30-80 cm high.

Distribn: St (Stirling Ra.).

Flg: Sept-Nov



14 ***D. squarrosa***  
Pink Mountain  
Bell

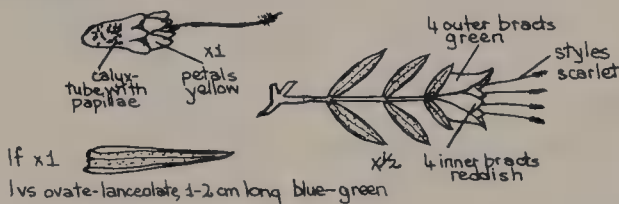
## Section 2

**A. Flowers 4 in the head; leaves mostly opposite and with recurved margins.**

Habit: Shrub 30-60 cm high.

Distribn: Da, Da (C), St, St (C), Wa (s c).

Flg: July-Dec



15 ***D. citriodora***  
Lemon-scented  
Myrtle

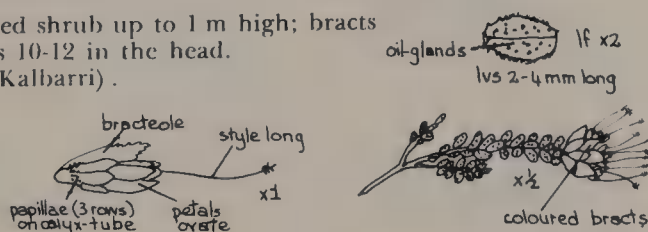
**A. Flowers numerous in the head; leaves alternate, crowded.**

**B. Leaves oblong with recurved ciliate margins.**

Habit: Much-branched shrub up to 1 m high; bracts purple-red; flowers 10-12 in the head.

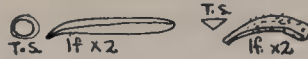
Distribn: Ir, Ir (C) (Kalbarri).

Flg: Aug-Sept



16 ***D. oldfieldii***

B. Leaves linear, semi-terete or triquetrous.



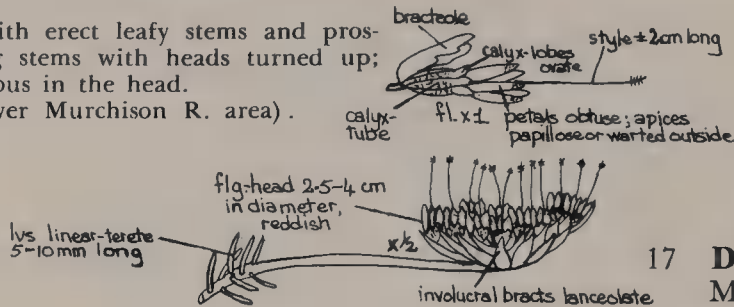
C. Decumbent, straggling shrub.

D. Calyx-tube glandular and obscurely 5-ribbed.

Habit: Shrub with erect leafy stems and prostrate flowering stems with heads turned up; flowers numerous in the head.

Distribn: Ir (Lower Murchison R. area).

Flg: Sept-Dec



17

***D. virescens***

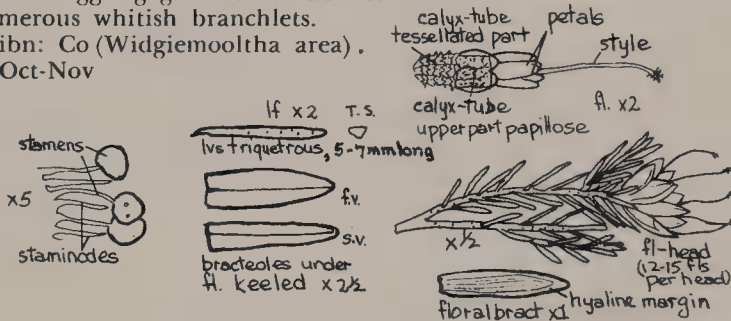
Murchison Darwinia

D. Calyx-tube transversely rugulose (tessellated) in the lower half and ± papillose in upper part.

Habit: Straggling glabrous shrub with numerous whitish branchlets.

Distribn: Co (Widgiemooltha area).

Flg: Oct-Nov



18

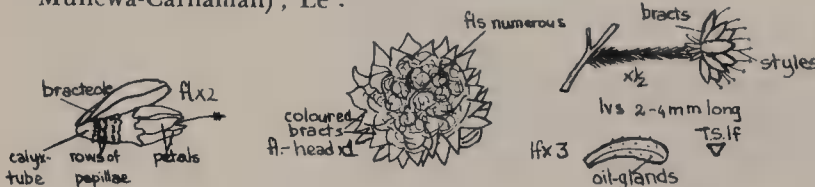
***D. luehmannii***

C. Shrub ± erect, dense, much-branched.

D. Heads erect, dark purplish-red.

Habit: Much-branched shrub up to 70 cm high.

Distribn: An, Av (Dalwallinu), Co-Ir (Merredin-Mullewa-Carnamah), Le.



19

***D. purpurea***

Rose Darwinia

D. Heads nodding, greenish-yellow; inner bracts with purplish-red margins.

10 ***D. acerosa***

(see p. 14)

Section 3

A. Leaves short, 2-4 mm long, crowded, appressed on the smaller branches.

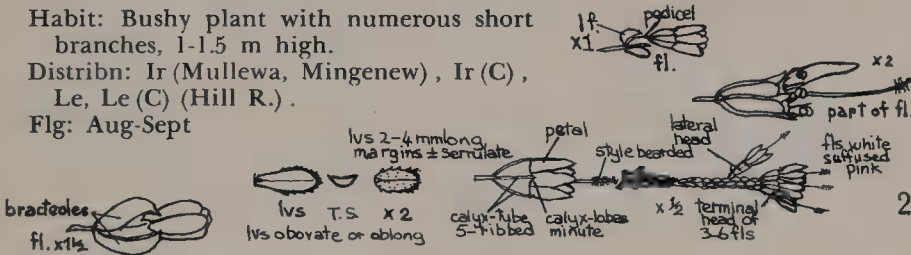
B. Flowers shortly pedicellate in the heads.

C. Heads narrow, terminal (with 3-6 flowers) or lateral (1-flowered).

Habit: Bushy plant with numerous short branches, 1-1.5 m high.

Distribn: Ir (Mullewa, Mingenew), Ir (C), Le, Le (C) (Hill R.).

Flg: Aug-Sept



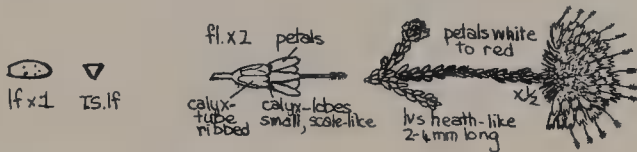
20 ***D. pauciflora***

C. Heads globular, terminal, with numerous flowers.

Habit: Erect, bushy shrub up to 70 cm high.

Distribn: Da (Darling Ra.), Ey, Ey (C), St (Stirling Ra.), St (C), Wa (C).

Flg: Aug-Oct



21 ***D. vestita***  
Pom-pom Darwinia

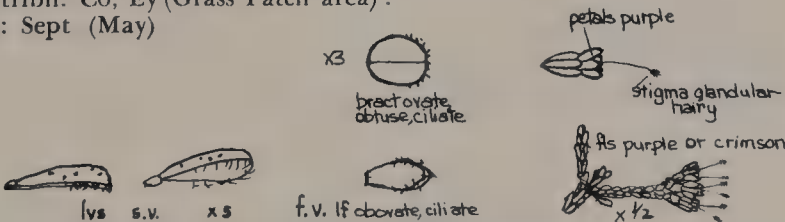
B. Flowers sessile in terminal heads.

C. Flowers 4-7 in the head.

Habit: Small diffuse shrub up to 60 cm high.

Distribn: Co, Ey (Grass Patch area).

Flg: Sept (May)



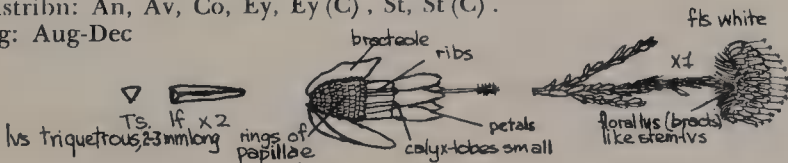
22 ***D. polycephala***

C. Flowers numerous in globular heads.

Habit: Erect bushy shrub 30-90 cm high.

Distribn: An, Av, Co, Ey, Ey (C), St, St (C).

Flg: Aug-Dec



23 ***D. diosmoides***

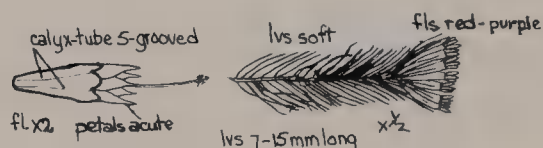
A. Leaves 5-20 mm long, not closely appressed, sometimes spreading.

B. Leaves filiform.

Habit: Small diffuse, much-branched shrub.

Distribn: Da (C) (Moore R.), Ir (C) (Murchison R.),  
Le.

Flg: Oct-Nov



24 ***D. rhadinophylla***

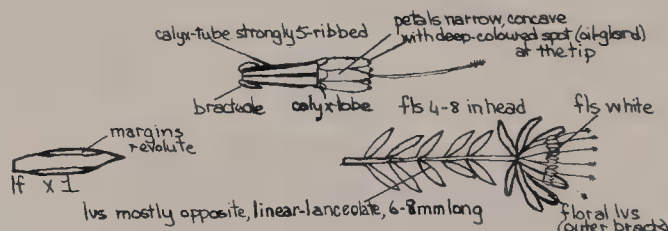
B. Leaves linear-lanceolate, linear, sometimes semi-terete.

C. Flowers sessile.

Habit: Diffuse, low, spreading shrub up to 30 cm high.

Distribn: Da (Mundaring, Glen Forrest).

Flg: Aug



25 ***D. thymoides***

Domin (1921/2) suggests that *D. saturejifolia* Turcz. represents a variety of *D. thymoides*.

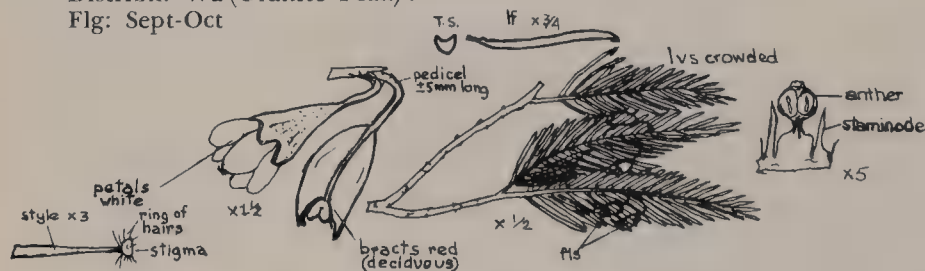
C. Flowers on short pedicels.

D. Flowers nodding.

Habit: Small glabrous shrub up to 80 cm high.

Distribn: Wa (Granite Peak).

Flg: Sept-Oct



26 ***D. forrestii***†

† F. Mueller (1878) placed this species under *Darwinia* but the style and anther characters suggest that it should be placed under *Chamelaucium* (see key to genera). N. Marchant (W. Aust. Herbarium) and G. Keighery (Kings Park Bot. Gardens) who are currently monographing these two genera, have advised (pers. comm.) that they will in fact be making the new combination.

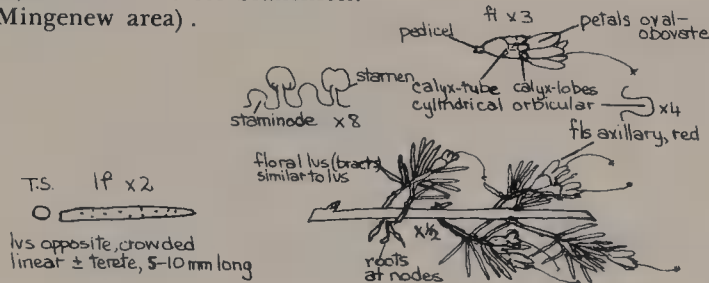


D. Flowers erect.

Habit: Prostrate glabrous shrub, often rooting at the nodes, with short erect branchlets.

Distribn: Ir (Mingenew area).

Flg: Aug



27 **D. repens**

Section 4

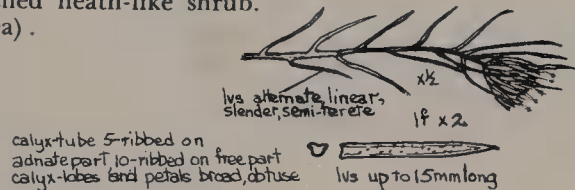
A. Flowers in heads numerous.

B. Heads simple, terminal; leaves alternate.

Habit: Erect, much-branched heath-like shrub.

Distribn: Da (Swan R. area).

Flg: Sept



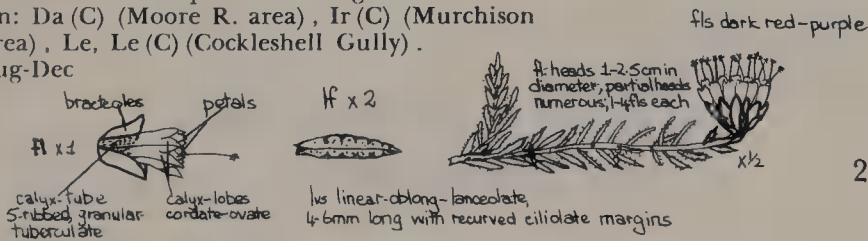
28 **D. pinifolia**

B. Heads compound (consisting of several partial heads), hemispherical, terminal; leaves opposite.

Habit: Diffuse shrub up to 25 cm high.

Distribn: Da (C) (Moore R. area), Ir (C) (Murchison R. area), Le, Le (C) (Cockleshell Gully).

Flg: Aug-Dec



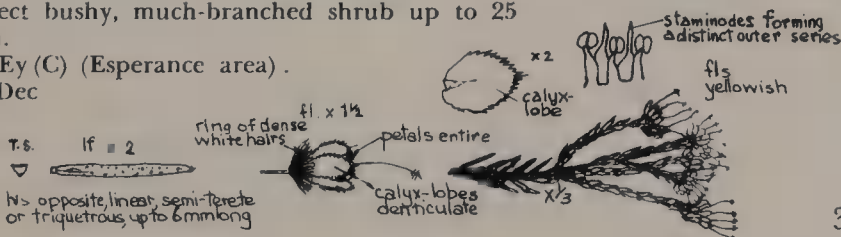
29 **D. sanguinea**

A. Flowers few in the upper axils of short branchlets, forming a dense flat-topped leafy corymb.

Habit: Erect bushy, much-branched shrub up to 25 cm high.

Distribn: Ey (C) (Esperance area).

Flg: Sept-Dec



30 **D. verticordina**

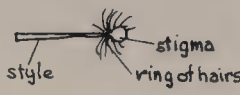
3 *Chamelaucium*

A. Style bare under stigma; calyx-tube narrow, top-shaped or  $\pm$  cylindrical.

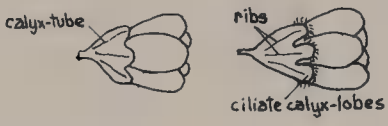


Page  
Section 1 20

A. Style with ring of hairs under stigma.



B. Calyx-tube broad.



Section 2 21

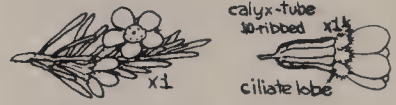
B. Calyx-tube narrow,  $\pm$  cylindrical.



Section 3 24

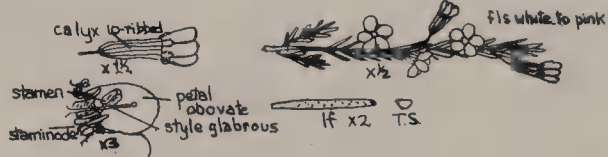
Section 1

A. Flowers axillary; calyx-lobes ciliate.



B. Calyx-tube  $\pm$  one and a half times the length of the petals.

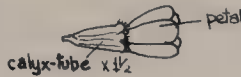
Habit: Erect bushy or tufted shrub 20-40 cm high.  
Distribn: Co, Ey, Ey (C) , St, St (C) .  
Flg: Aug-Oct



1 *C. ciliatum*

B. Calyx-tube  $\pm$  the same length as the petals.

Habit: Shrub 60-90 cm high.  
Distribn: Ey, St (Gnowangerup) .  
Flg: Sept-Oct



1a *C. ciliatum*†

† Note. A plant with the calyx-tube  $\pm$  the same length as the petals (as above) was described by Turczaninow (1852) under *Decalophium darwinioides*. Mueller (1872) considered this to be synonymous with *C. ciliatum* Desf. (1819). C. A. Gardner, however, regarded it as being distinct and annotated herbarium sheets (Melb.) with the new combination *C. darwinioides* in ms., but this has not been validated.

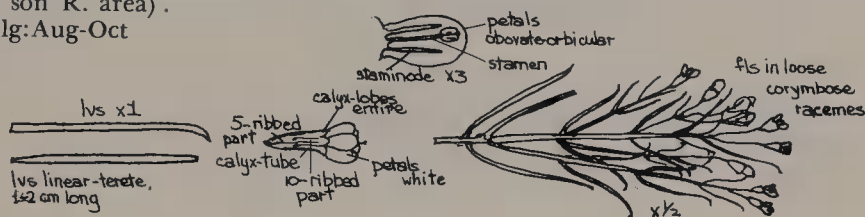
- A. Flowers in short terminal and axillary racemes;  
calyx-lobes  $\pm$  entire.

B. Staminodes long.

Habit: Shrub with slender divaricate branches.

Distribn: An, Av (Tammin), Co, Ir, Ir (C) (Murchison R. area).

Flg: Aug-Oct



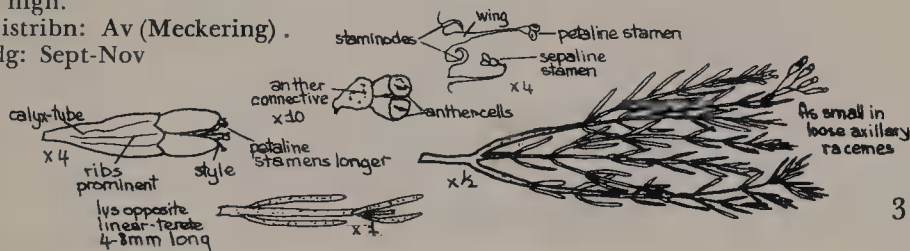
2 *C. micranthum*

B. Staminodes short.

Habit: Bushy, much-branched shrub up to 1 m high.

Distribn: Av (Meckering).

Flg: Sept-Nov



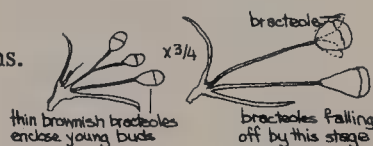
3 *C. heterandrum*

## Section 2

- A. Leaves opposite.

(alternate A p. 23)

- B. Bracteoles falling off long before flower opens.



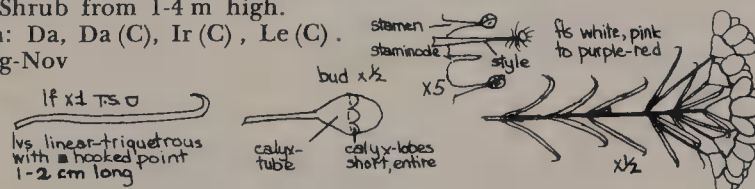
(alternate B p. 23)

- C. Calyx-lobes very short and broad, entire, glabrous. Flowers in terminal corymbs.

Habit: Shrub from 1-4 m high.

Distribn: Da, Da (C), Ir (C), Le (C).

Flg: Aug-Nov



4 *C. uncinatum*  
Geraldton  
Waxflower

Leaves linear, terete, mucronate but not hooked.  
Distribn: Ir (C).

4a *C. uncinatum*  
var. *leptophyllum*

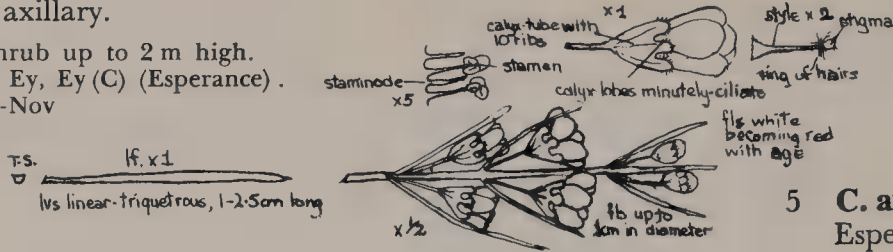
- C. Calyx-lobes well developed, minutely ciliate.

## D. Flowers axillary.

Habit: Shrub up to 2 m high.

Distribn: Ey, Ey (C) (Esperance).

Flg: Sept-Nov



5 ***C. axillare***  
Esperance Waxflower

## D. Flowers terminal or almost so.

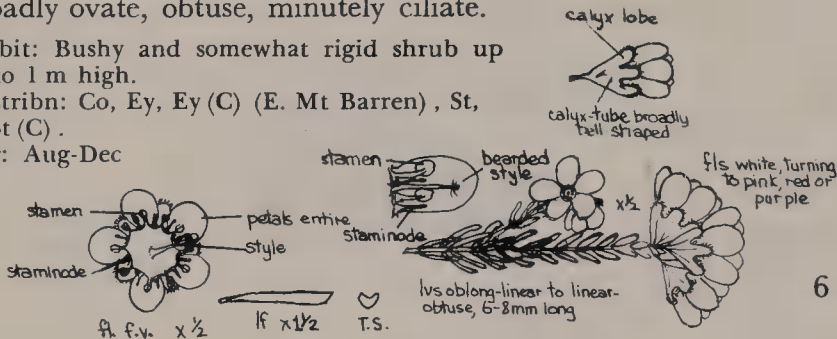
## E. Calyx-lobes minutely ciliate.

## F. Flowers 2-4 at ends of branches; calyx-tube broadly bell-shaped; calyx-lobes broadly ovate, obtuse, minutely ciliate.

Habit: Bushy and somewhat rigid shrub up to 1 m high.

Distribn: Co, Ey, Ey (C) (E. Mt Barren), St, St (C).

Flg: Aug-Dec



6 ***C. megalopetalum***  
Large Waxflower

Bentham records four different forms collected in the Ey (C), St (C) districts:

1. large flowers and crowded leaves;
2. large flowers and short leaves erect in distant pairs;
3. smaller flowers, with short and rather distant leaves (Drummond 5th coll. no 105);
4. small flowers, crowded decussate leaves; calyx-lobes more strongly ciliate (Drummond 5th coll. no 104).

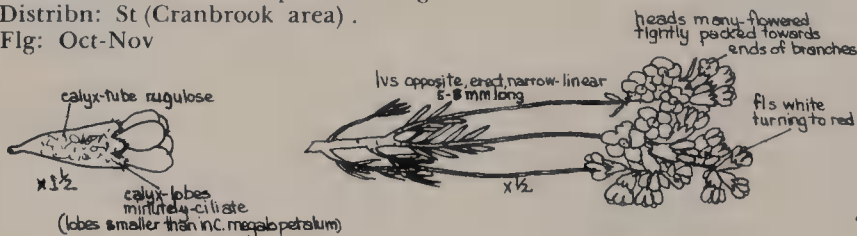
Turczaninow (1852) had described *Decalophium juniperinum* from Drummond 5 no 104 material and *Decalophium melaleucum* from Drummond 5 no 105. Mueller (1872-4) placed those in synonymy with *C. megalopetalum*. C. A. Gardner apparently considered these to warrant retention as species and made the new combinations in herbarium specimens (Melb., Kew). They were not validated.

## F. Flowers tightly packed in many-flowered heads; calyx-tube top-shaped in lower part and narrower than in preceding species; calyx-lobes small.

Habit: Slender shrub up to 1 m high.

Distribn: St (Cranbrook area).

Flg: Oct-Nov



7 ***C. confertiflorum***

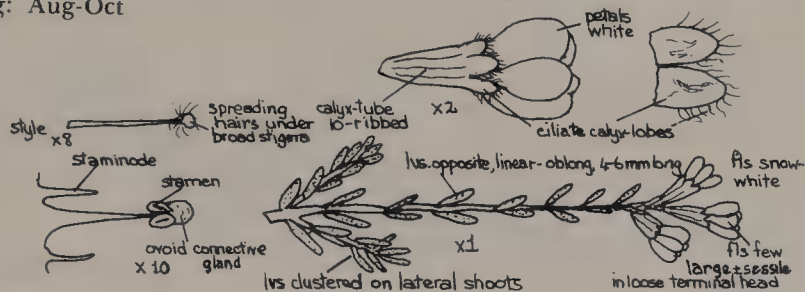
## E. Calyx-lobes strongly ciliate.

Habit: Erect shrub up to 60 cm high.

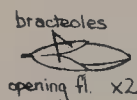
Distribn: An (Morawa-Yalgoo area),

Av (Koorda), Ey, Ir (Yuna), St (Stirling Ra.).

Flg: Aug-Oct

8 *C. pauciflorum*

## B. Bracteoles persistent, covering calyx-tube; flowers in terminal heads.

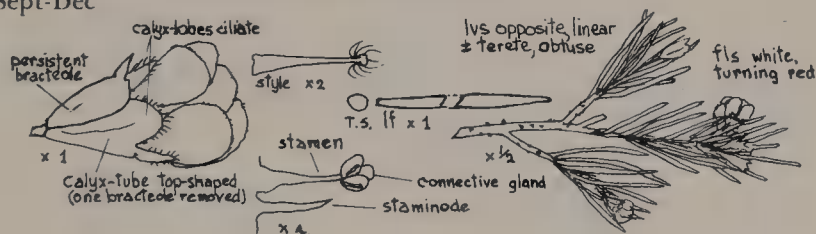


## C. Leaves mostly 1.5-2.5 cm long.

Habit: Large shrub with twiggy branches, 1-2 m high.

Distribn: Co (Hyden), Ey (L. King, Ravensthorpe).

Flg: Sept-Dec

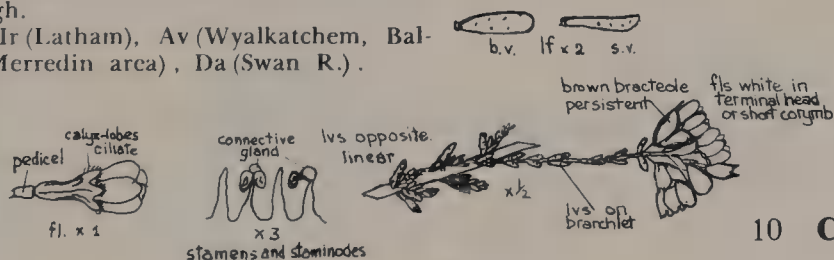
9 *C. virgatum*

## C. Leaves mostly 4-6 mm long.

Habit: Ericoid shrub with long and short branches 30-60 cm high.

Distribn: An-Ir (Latham), Av (Wyalkatchem, Bal-lidu), Co (Merredin area), Da (Swan R.).

Flg: Aug-Nov

10 *C. brevifolium*

## A. Leaves alternate; scattered or crowded.

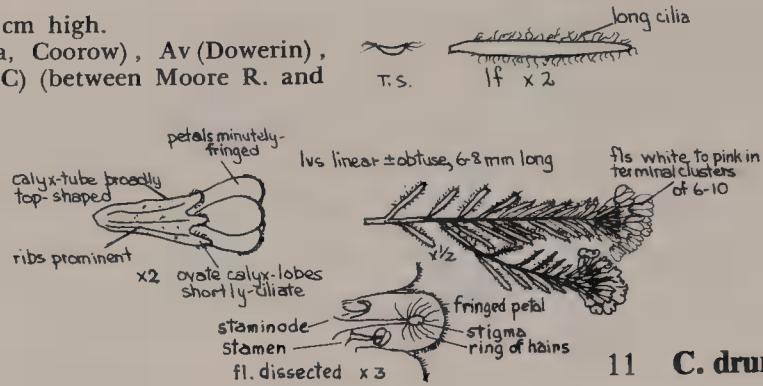


## B. Leaf margins ciliate.

Habit: Low shrub 15-40 cm high.

Distribn: An-Ir (Mullewa, Coorow), Av (Dowerin), Co (Cleary), Da (C) -Ir (C) (between Moore R. and Murchison R.).

Flg: Aug-Oct

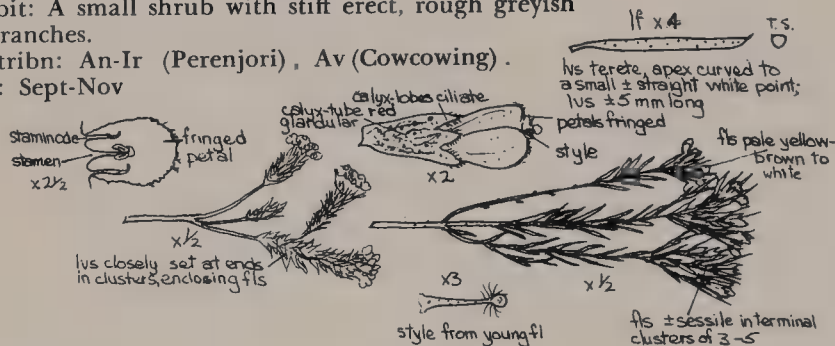
11 *C. drummondii*

## B. Leaf margins entire; glabrous.

Habit: A small shrub with stiff erect, rough greyish branches.

Distribn: An-Ir (Perenjori), Av (Cowcowing).

Flg: Sept-Nov

12 *C. hallii*

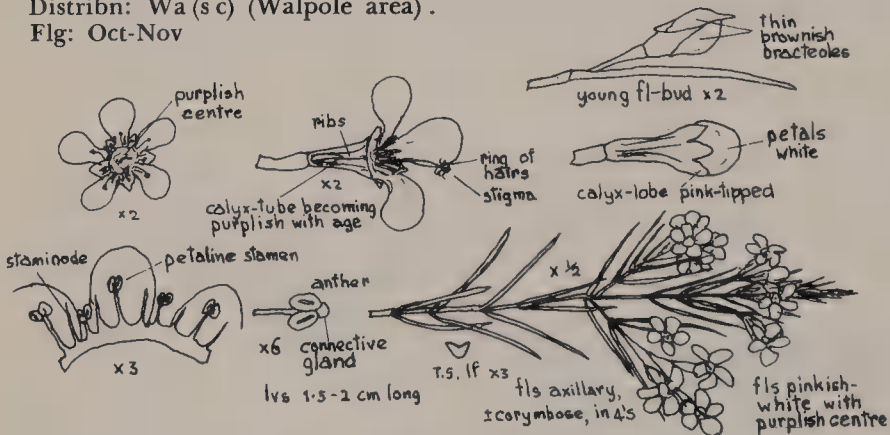
## Section 3

Bracteoles falling off long before flowering; calyx-tube 10-ribbed; calyx-lobes entire, pink-tipped.

Habit: Shrub 2-3 m high.

Distribn: Wa (s c) (Walpole area).

Flg: Oct-Nov

13 *C. sp.†*  
Walpole Waxflower

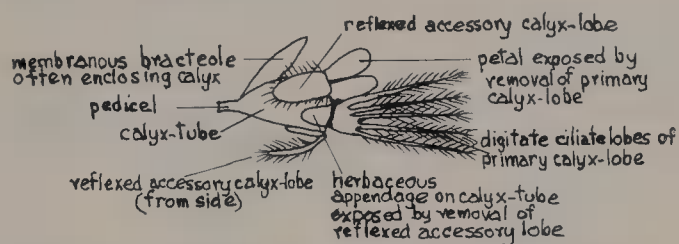
† Although this species has been collected and grown (e.g. in King's Park Botanic Garden) for some time, it has not been described botanically or named. This is being done by N. Marchant and G. Keighery who are currently monographing the genus.



4 *Verticordia*

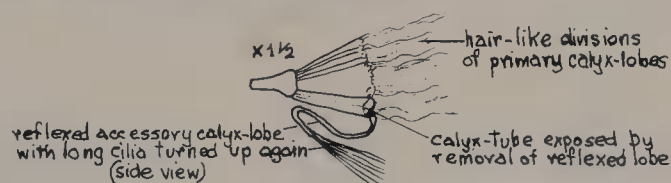
A. Accessory calyx-lobes present and reflexed on calyx-tube.

B. Reflexed accessory calyx-lobes not turned up at base; primary calyx-lobes divided into plumose segments.



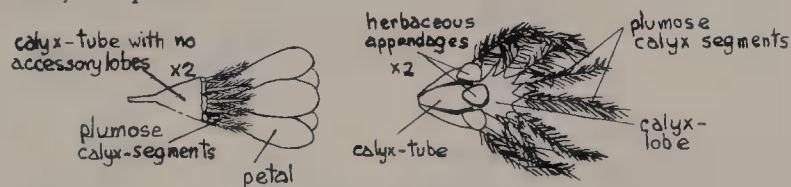
Page  
Section 1 26

B. Reflexed calyx-lobes (accessory-lobes) turned up again at base of calyx-tube and ending in fine cilia; calyx-lobes divided into hair-like divisions.



Section 2 28

A. No accessory calyx-lobes present but herbaceous appendages may be present.

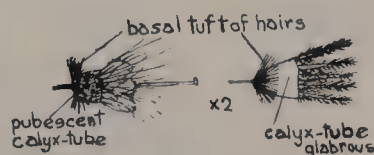


B. Calyx-tube glabrous.

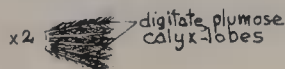


Section 3 30

B. Calyx-tube pubescent or glabrous; tuft of hairs always present at base.



C. Calyx-lobes deeply divided into narrow digitate lobes, each plumose.



Section 4 36

C. Calyx-lobes divided into numerous hair-like divisions.



Page

Section 5 39

## Section 1

A. Flowers large, 1.5-2.5 cm in diameter.

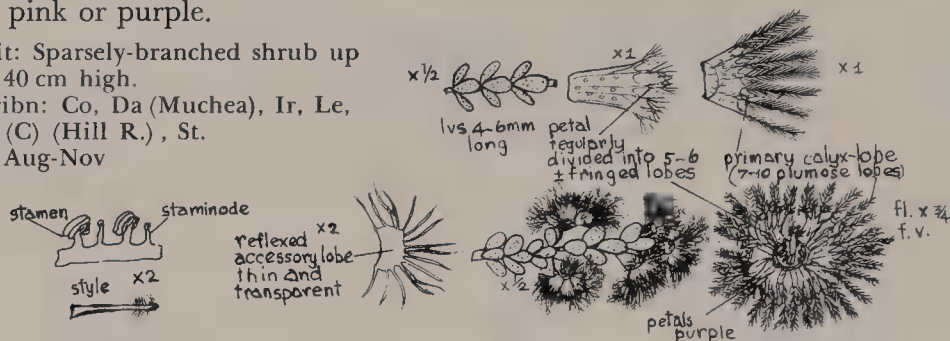
(alternate A p.27)

B. Leaves obovate; calyx-segments white; petals pale pink or purple.

Habit: Sparsely-branched shrub up to 40 cm high.

Distribn: Co, Da (Muehea), Ir, Le, Le (C) (Hill R.), St.

Flg: Aug-Nov

1 ***V. ovalifolia***

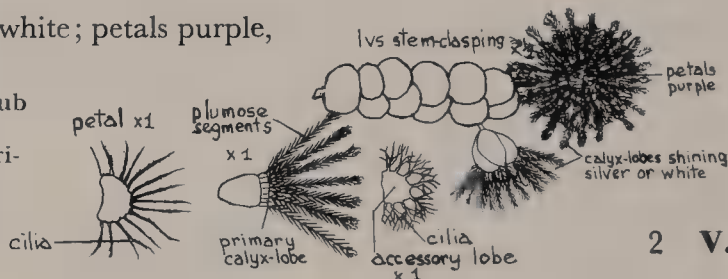
B. Leaves orbicular.

C. Plumose calyx-segments white; petals purple, fringed with long cilia.

Habit: Glaucous-leaved shrub up to 2 m high.

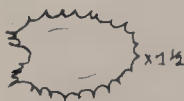
Distribn: Ir, Ir (C) (Kalbarri-Ajana area).

Flg: Nov-Dec

2 ***V. oculata***

C. Plumose calyx-segments coloured.

D. Petals bordered by short teeth.

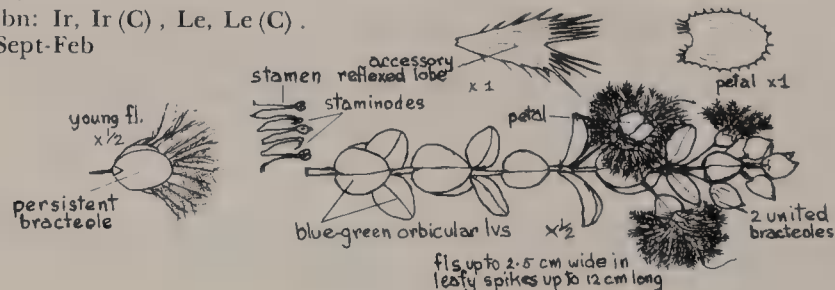


E. Flowers crimson-red.

Habit: Glaucous straggling shrub up to 2 m high.

Distribn: Ir, Ir (C), Le, Le (C).

Flg: Sept-Feb

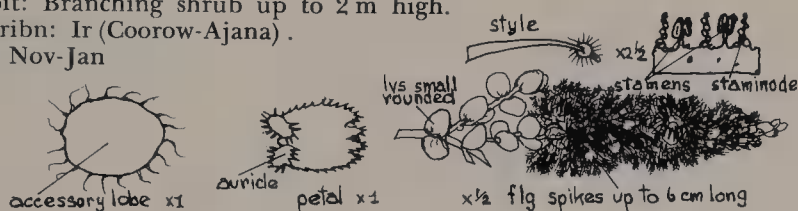
3 ***V. grandis***  
Scarlet  
Featherflower

## E. Flowers violet-purple to maroon coloured.

Habit: Branching shrub up to 2 m high.

Distribn: Ir (Coorow-Ajana).

Flg: Nov-Jan

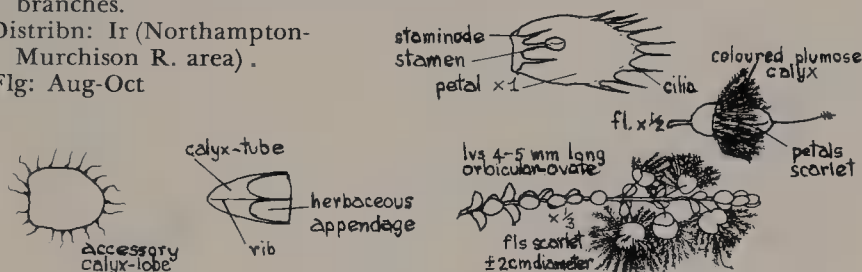
4 ***V. muellerana***

## D. Petals bordered by long cilia.

Habit: Ericoid shrub up to 1 m high, with erect branches.

Distribn: Ir (Northampton-Murchison R. area).

Flg: Aug-Oct

5 ***V. etheliana***A. Flowers not above 1 cm in diameter.

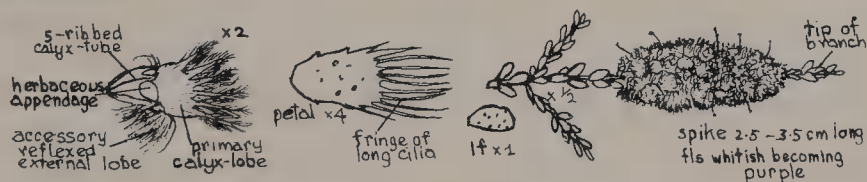
## B. Flowers rose-pink or purple (sometimes white suffused purple).

## C. Flowers in dense spikes below ends of branches.

Habit: Heath-like shrub with divaricate branches.

Distribn: Av (Dalwallinu), Ir, Ir (C), Le (C).

Flg: Oct-Dec

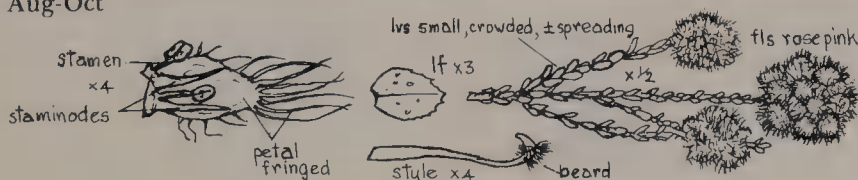
6 ***V. spicata***  
Spiked  
Featherflower

## C. Flowers in ± globose heads at ends of branches.

Habit: Erect, bushy shrub 1-2 m high.

Distribn: Ash (Wiluna area) and N. West.

Flg: Aug-Oct

7 ***V. forrestii***  
Forrest's  
Featherflower

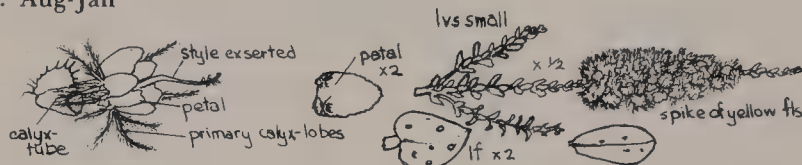
B. Flowers yellow, axillary, in spikes below ends of branches.

C. Petals entire or minutely denticulate.

Habit: Shrub 60-120 cm high.

Distribn: Ir (Yuna-Ajana area), Ir (C) (Kalbarri).

Flg: Aug-Jan



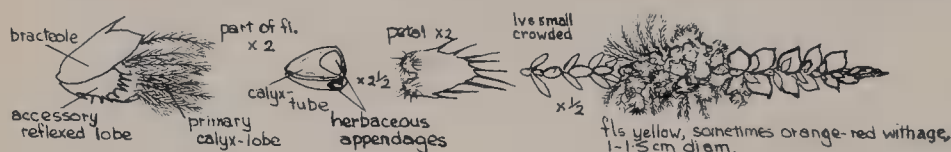
8 **V. lepidophylla**

C. Petals cordate, fringed with long cilia.

Habit: Glaucous shrub 1.5-2 m high, with numerous erect branches from the base.

Distribn: Ir, Ir (C), Le.

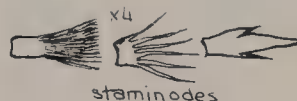
Flg: Oct-Jan



9 **V. chrysostachys**

## Section 2

A. Staminodes fringed, ciliate or palmatifid.



B. Petals ciliate.

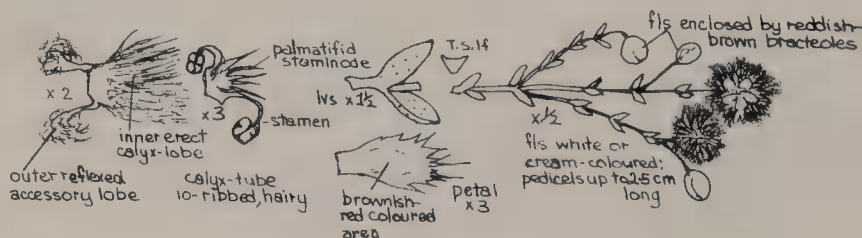


C. Leaves small, thick, 2-6 mm long,  $\pm$  triquetrous.

Habit: Dwarf glabrous shrub with flowers in a dense cauliflower-like head.

Distribn: Av (Cunderdin), Co (Merredin), Ey (L. King), Ey (C) (Esperance), St (Ongerup).

Flg: Sept-Nov



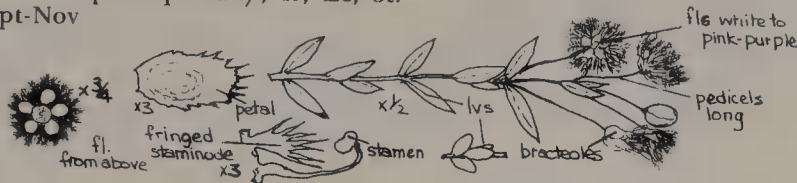
10 **V. roei**  
Roc's  
Featherflower

C. Leaves broadly ovate to oblong, flat, 4-12 mm long.

Habit: Erect shrub 30-60 cm high.

Distribn: Av, Co, Da (Upper Swan), Ey-Ey (C) (Ravensthorpe-Hopetoun), Ir, Le, St.

Flg: Sept-Nov



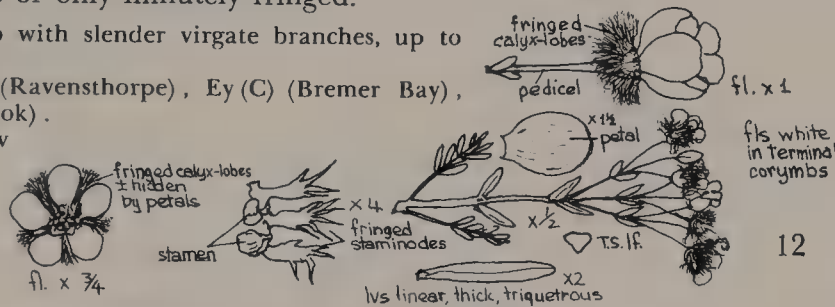
11 *V. insignis*

B. Petals entire or only minutely fringed.

Habit: Shrub with slender virgate branches, up to 1 m high.

Distribn: Ey (Ravensthorpe), Ey (C) (Bremer Bay), St (Cranbrook).

Flg: Sept-Nov



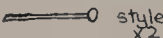
12 *V. habrantha*  
Hidden  
Featherflower

A. Staminodes entire (not fringed or ciliate)



B. Style straight.

C. Style glabrous; petals fringed by long cilia.

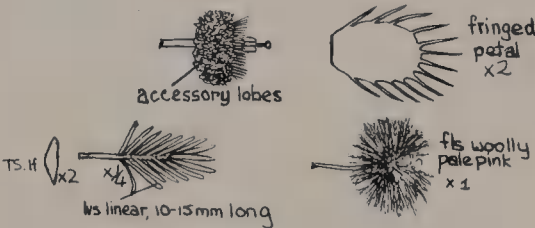


D. Hair-like divisions of reflexed accessory lobes exceedingly numerous and intricate.

Habit: Erect, much-branched shrub up to 1 m high.

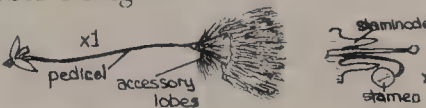
Distribn: Av, Ir, Ir (C).

Flg: Sept-Nov



13 *V. monadelpha*  
Pink Woolly  
Featherflower

D. Cilia of reflexed accessory lobes straight and not intricate.



10 *V. roei*  
(see p. 28)

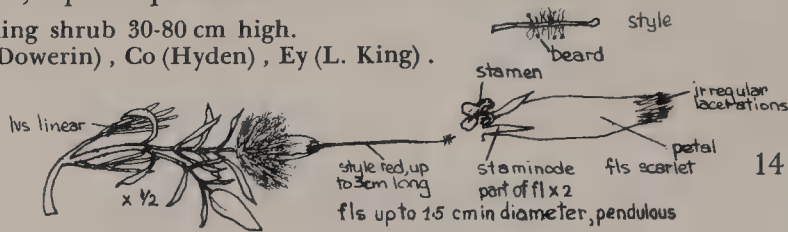


C. Style bearded; tips of petals lacerate.

Habit: Spreading shrub 30-80 cm high.

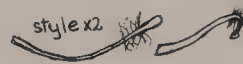
Distribn: Av (Dowerin), Co (Hyden), Ey (L. King).

Flg: Oct-Dec



14 ***V. mitchelliana***  
Rapier  
Featherflower

B. Style curved or bent, and bearded towards its end.

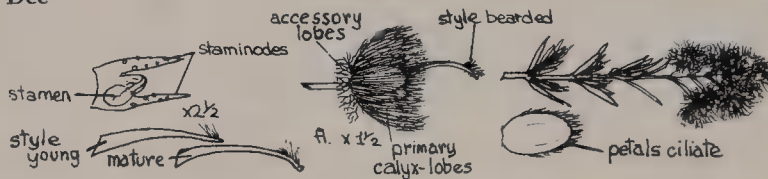


C. Flowers deep purple-red, arranged in a broad loose corymb.

Habit: Shrub 10-50 cm high; leaves linear, 5-7 mm long, bundled.

Distribn: Av (Wyalkatchem), Co (Coolgardie).

Flg: Oct-Dec



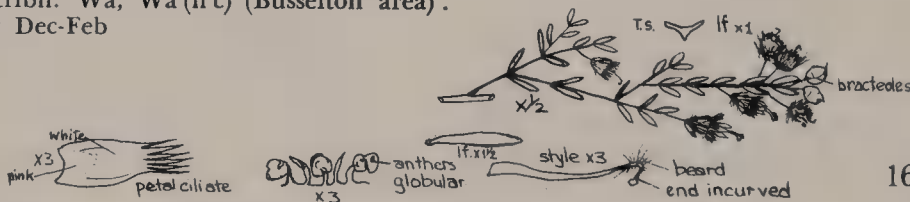
15 ***V. pritzelii***

C. Flowers white to pale pink, few, in upper axils or in small corymbs.

Habit: Slender plant 30-45 cm high.

Distribn: Wa, Wa (n c) (Busselton area).

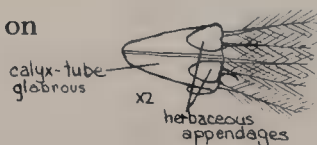
Flg: Dec-Feb



16 ***V. lehmannii***

Section 3

A. Five herbaceous appendages present on calyx-tube.



(alternate A p. 32)

B. Leaves semi-terete or triquetrous.

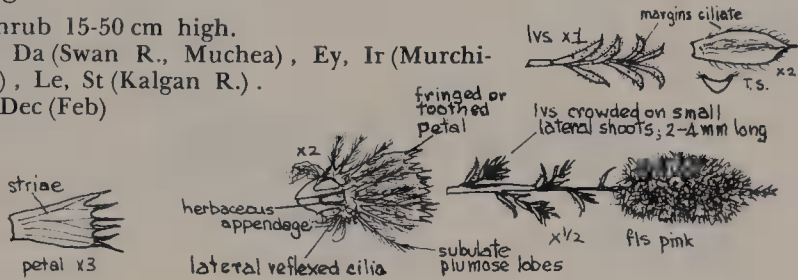


C. Leaves crowded on small lateral shoots, spreading.

Habit: Shrub 15-50 cm high.

Distribn: Da (Swan R., Muchea), Ey, Ir (Murchison R.), Le, St (Kalgan R.).

Flg: Oct-Dec (Feb)



17 *V. pennigera*

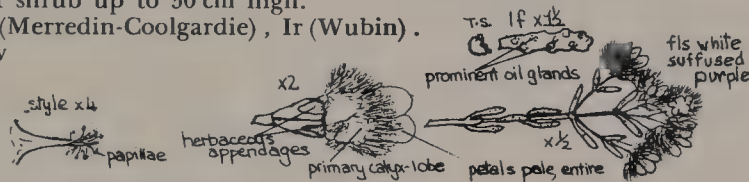
(see also p. 34)

C. Leaves closely appressed to stems.

Habit: Dwarf shrub up to 30 cm high.

Distribn: Co (Merredin-Coolgardie), Ir (Wubin).

Flg: Sept-Nov



18 *V. rennicana*

B. Leaves obovate or oblong.

C. Leaves closely appressed, imbricate.

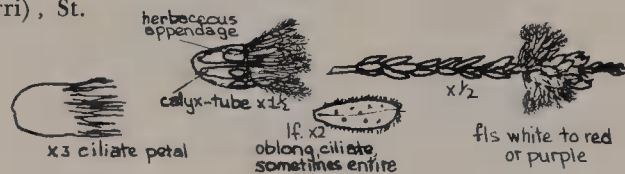
Habit: Shrub 30-60 cm high.

Distribn: Av (Tammin), Co (Merredin), Ey-

Ey (C) (L. King, E. Mt Barren), Ir,

Ir (C) (Maya, Kalbarri), St.

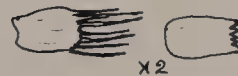
Flg: Sept-Dec



19 *V. pholidophylla*

C. Leaves spreading.

D. Petals ovate, fringed or 3-5-dentate at end.

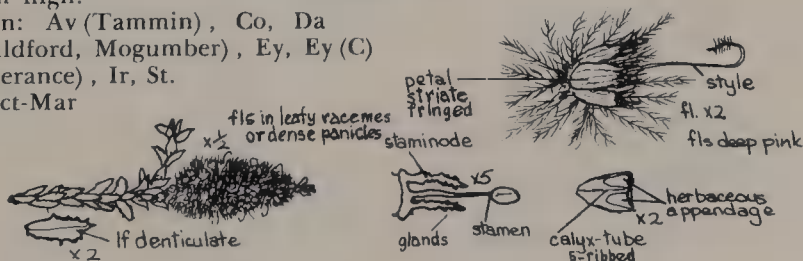


E. Petals glabrous on the back; style hooked, exserted.

Habit: Shrub with spreading branches up to 70 cm high.

Distribn: Av (Tammin), Co, Da (Guildford, Mogumber), Ey, Ey (C) (Esperance), Ir, St.

Flg: Oct-Mar



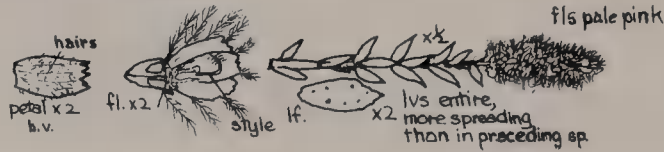
20 *V. drummondii*

E. Petals  $\pm$  hairy on the back; style curved, included.

Habit: Shrub 30-60 cm high.

Distribn: Da (Cannington, Mogumber).

Flg: Nov-Jan



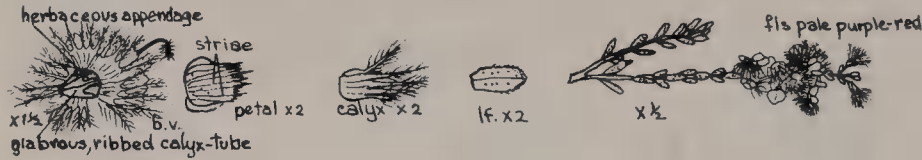
21 **V. lindleyi**

D. Petals orbicular, striate, minutely denticulate towards apex.

Habit: Small shrub up to 50 cm high; flowers and appendages of calyx-lobes smaller than in *V. drummondii*. See p. 31.

Distribn: Av (Meckering), St (Cranbrook).

Flg: Dec-Feb



22 **V. hughanii**

A. No herbaceous appendages present on calyx-tube.

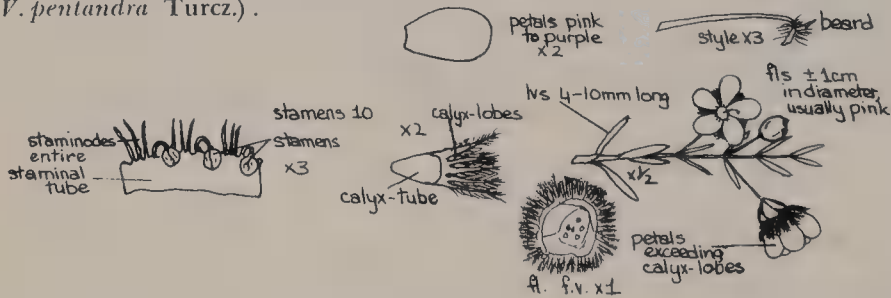
B. Petals entire.

Habit: Small shrub 30 cm-1 m high.

Distribn: Av, Co, Da, Ey, Ir, Ir (C), Le.

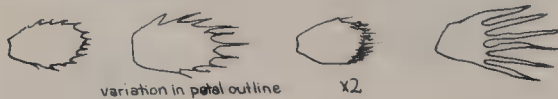
Flg: Aug-Nov

Note. Forms with 5 stamens, but which are otherwise indistinguishable, occur (earlier separated as *V. pentandra* Turcz.).

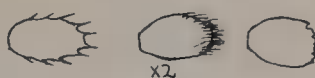


23 **V. picta**  
Painted  
Featherflower

B. Petals denticulate, fringed or divided into 5-9 subulate lobes.



C. Petals denticulate or deeply fringed.



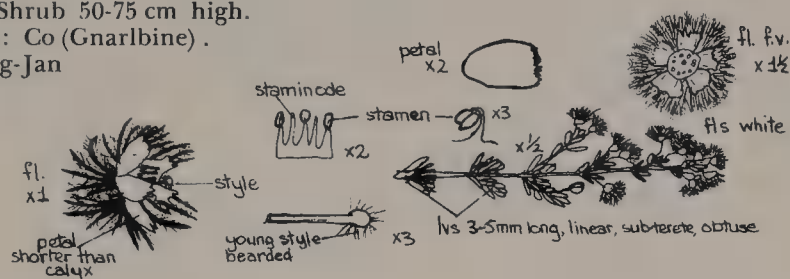
D. Leaf margins entire.

E. Flowers white.

Habit: Shrub 50-75 cm high.

Distribn: Co (Gnarlbine).

Flg: Aug-Jan



24 **V. helmsii**

E. Flowers yellow to orange.

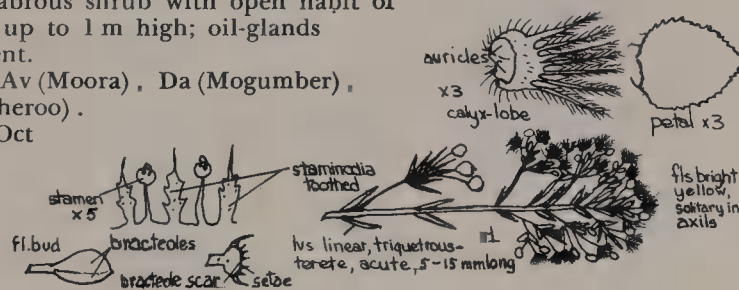
F. Two reflexed ciliate basal auricles present with fringed calyx-lobes.

Habit: Glabrous shrub with open habit of growth, up to 1 m high; oil-glands prominent.

Distribn: Av (Moora), Da (Mogumber),

Le (Watheroo).

Flg: Sept-Oct



25 **V. patens**

F. Reflexed auricles lacking.

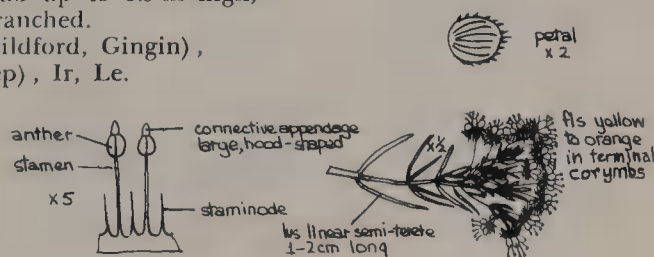
G. Staminodes subulate; petals denticulate, striate.

Habit: Erect shrub up to 1.5 m high, corymbosely branched.

Distribn: Da (Guildford, Gingin),

Da (C) (Yanchep), Ir, Le.

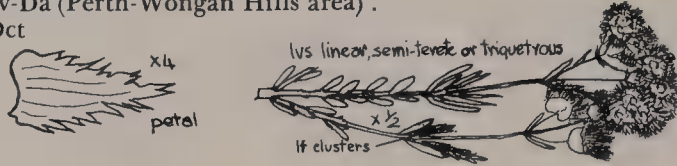
Flg: Nov-Jan



26 **V. nitens**  
Morrison  
Featherflower

G. Staminodes fringed; petals deeply fringed.

Habit: Erect plant with slender branches.  
Distribn: Av-Da (Perth-Wongan Hills area).  
Flg: Sept-Oct

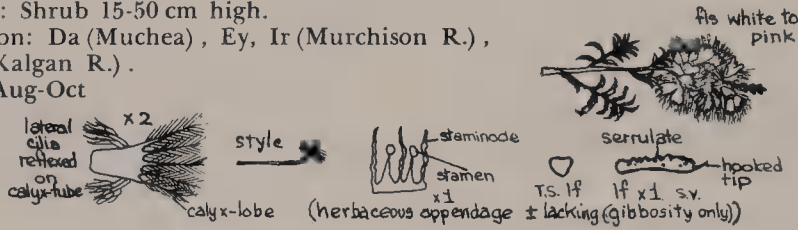


27 ***V. fimbrilepis***

D. Leaf margins ciliate or serrulate.

E. Flowers in upper axils forming leafy racemes.

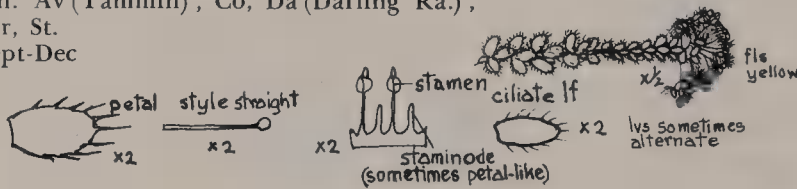
Habit: Shrub 15-50 cm high.  
Distribn: Da (Muchea), Ey, Ir (Murchison R.),  
St (Kalgan R.).  
Flg: Aug-Oct



17 ***V. pennigera***  
(see also p. 31)

E. Flowers in broad, many-flowered corymbs.

Habit: Erect shrub 60 cm-1 m high.  
Distribn: Av (Tammin), Co, Da (Darling Ra.),  
Ey, Ir, St.  
Flg: Sept-Dec



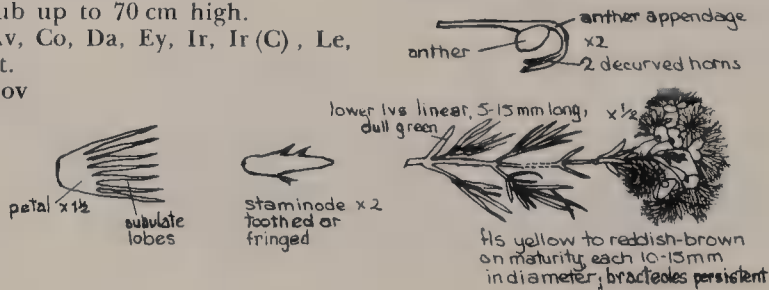
28 ***V. serrata***

C. Petals digitately divided into 5-9 rigid, subulate lobes.



D. Appendage of anther large with 2 decurved claw-like horns.

Habit: Shrub up to 70 cm high.  
Distribn: Av, Co, Da, Ey, Ir, Ir (C), Le,  
Le (C), St.  
Flg: Aug-Nov

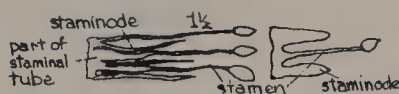


29 ***V. grandiflora***  
Claw  
Featherflower

D. Appendage of anther short, not horned.



E. Staminodes  $\pm$  entire.



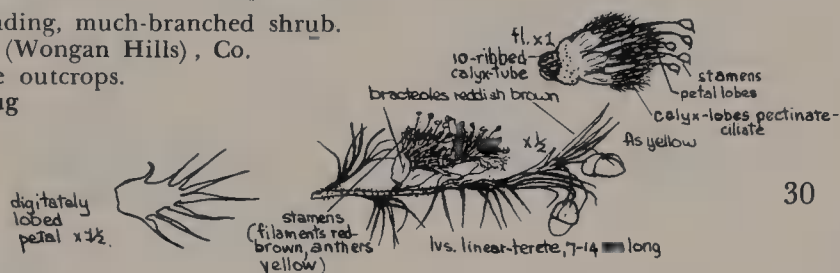
F. Stamens much exceeding the petals.

Habit: Spreading, much-branched shrub.

Distribn: Av (Wongan Hills), Co.

On granite outcrops.

Flg: June-Aug



30 ***V. staminosa***  
Wongan  
Featherflower

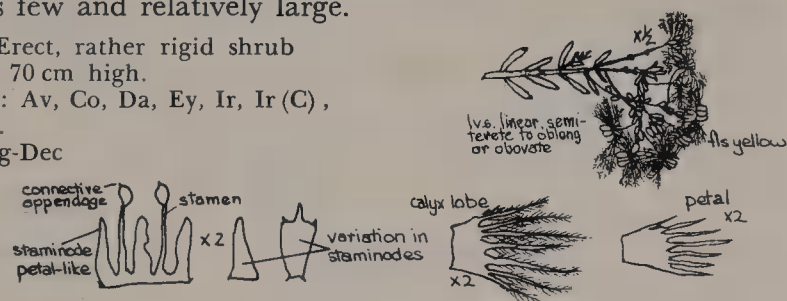
F. Stamens scarcely exceeding the petals.

G. Flowers few and relatively large.

Habit: Erect, rather rigid shrub  
up to 70 cm high.

Distribn: Av, Co, Da, Ey, Ir, Ir (C),  
Le, St.

Flg: Aug-Dec



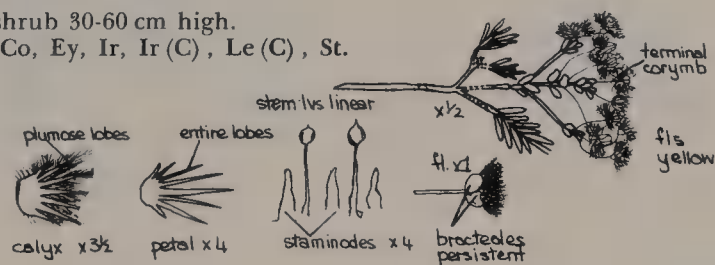
31 ***V. chrysantha***

G. Flowers numerous, small.

Habit: Erect shrub 30-60 cm high.

Distribn: Av, Co, Ey, Ir, Ir (C), Le (C), St.

Flg: Aug-Nov



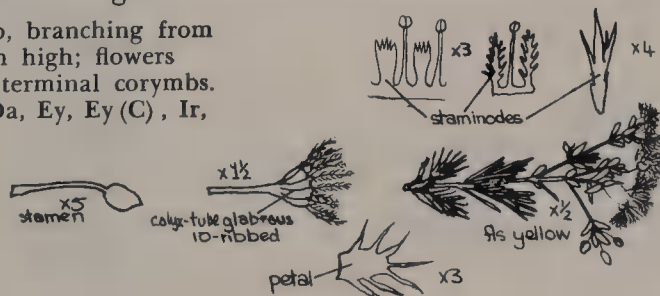
32 ***V. preissii***

E. Staminodes ciliate or fringed.

Habit: Small shrub, branching from  
base, up to 50 cm high; flowers  
in trichotomous terminal corymbs.

Distribn: Av, Co, Da, Ey, Ey (C), Ir,  
Le, St.

Flg: Aug-Oct

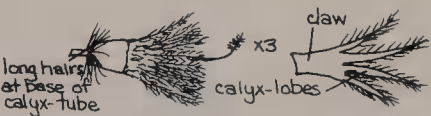


33 ***V. acerosa***



Section 4

A. Finger-like divisions of calyx-lobes united in a short, broad claw.

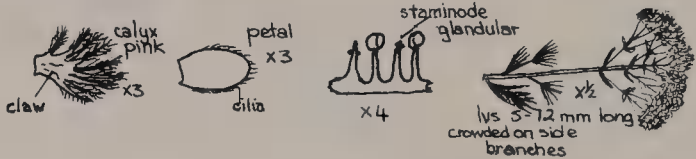


B. Flowers white or pink in dense leafy corymbs.

Habit: Erect bushy shrub up to 1 m high.

Distribn: Av, Co, Da, Ey, Ir, Le, St.

Flg: Sept-Jan



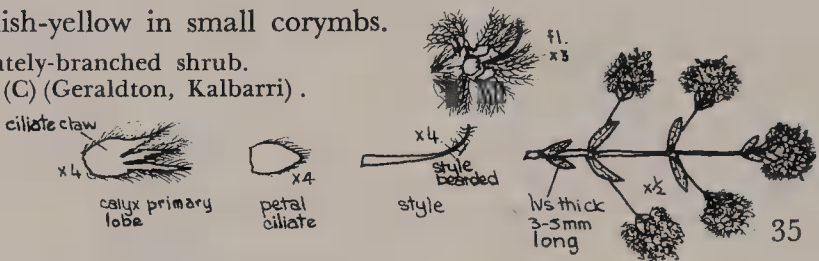
34 *V. densiflora*

B. Flowers greenish-yellow in small corymbs.

Habit: Divaricately-branched shrub.

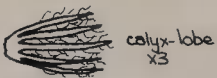
Distribn: Ir, Ir (C) (Geraldton, Kalbarri).

Flg: Aug-Nov



35 *V. stelluligera*

A. Finger-like divisions of calyx-lobes separated almost or quite to base.



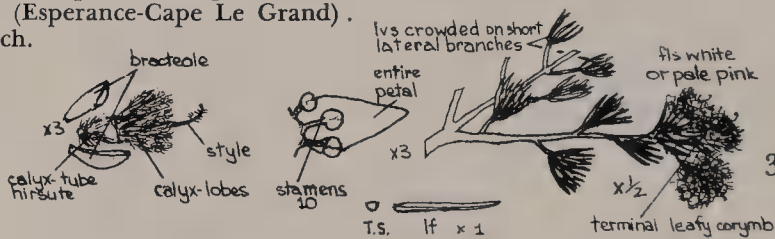
B. No staminodes present.

Habit: Bushy shrub up to 1 m high.

Distribn: Ey (C) (Esperance-Cape Le Grand).

Recherche Arch.

Flg: Aug-Feb



36 *V. minutiflora*

B. Staminodes present.

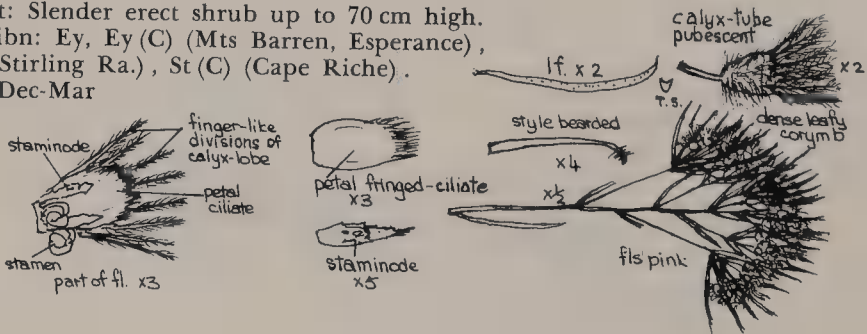
C. Staminodes lanceolate, petal-like, fringed, sometimes entire.

Habit: Slender erect shrub up to 70 cm high.

Distribn: Ey, Ey (C) (Mts Barren, Esperance),

St (Stirling Ra.), St (C) (Cape Riche).

Flg: Dec-Mar



37 *V. harveyi*  
Autumn  
Featherflower



Petals  $\pm$  entire (barely fringed); staminodes entire.

37a ***V. harveyi***  
var. ***nudipetala***

C. Staminodes linear.



D. Divisions of calyx-lobes flat, comb-like.



E. Style equal to or just exceeding petals; flowers white or pink.

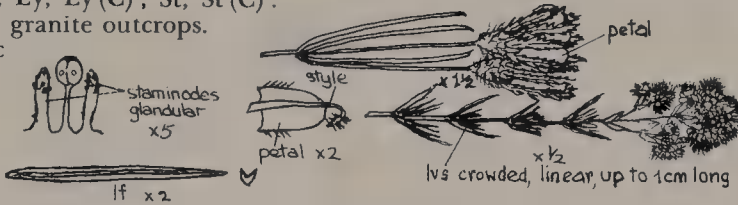
Habit: Erect bushy shrub up to 1 m high.

Variable species.

Distribn: Da, Ey, Ey (C), St, St (C).

Found on granite outcrops.

Flg: Sept-Dec



38 ***V. plumosa***  
Plumed  
Featherflower

Leaves clustered, shorter than in the species, 3-4 mm long.

Distribn: Av (Waeel), St (Cranbrook).

Flg: Oct

***V. plumosa***  
var. ***brevifolia***

A larger-flowered form with calyx-lobes spreading to  $\pm$  12 mm in diameter and with shorter hairs on the calyx-tube, occurs in the Ey (Esperance) area.

***V. plumosa***  
var. ***grandiflora***

A plant, which differs from *V. plumosa*, in being a slender shrub with only a slightly hairy calyx-tube and with more ciliate petals, but which Domin (1921) had considered to be a synonym of *V. plumosa* (*V. fontanesii* (see also Benthams 1866)), has recently been raised again to species status (*V. sieberi* Diezing ex Schau.). See Erickson *et al.* 1973. Redetermined A. George, Kew, 1968.

Distribn: St (C) (Albany area).

38a ***V. sieberi***

E. Style  $\pm$  twice length of petals or more.

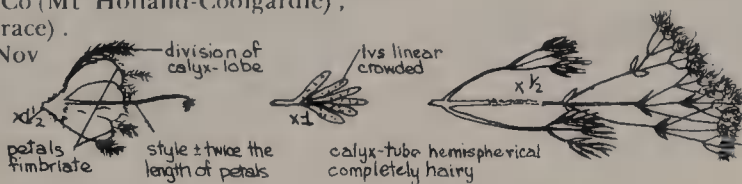
F. Flowers purple-red.

Habit: Branching shrub up to 40 cm high.

Distribn: Co (Mt Holland-Coolgardie),

St (L. Grace).

Flg: Oct-Nov



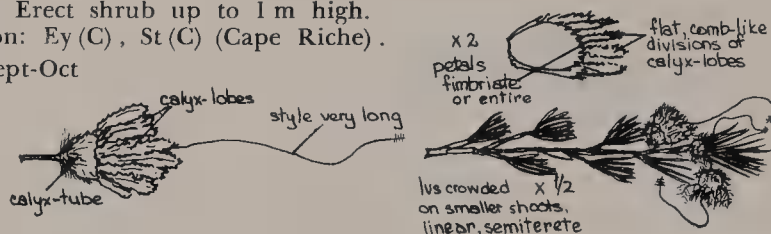
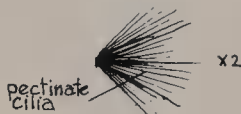
39 ***V. stenopetala***

## F. Flowers yellow.

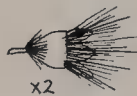
Habit: Erect shrub up to 1 m high.

Distribn: Ey (C), St (C) (Cape Riche).

Flg: Sept-Oct

40 ***V. helichrysantha***D. Divisions of calyx-lobes subulate;  
pectinate cilia long.

## E. Calyx-tube with ring of hairs at base only.

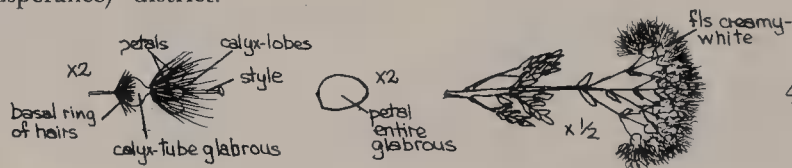
F. Leaves oblong, imbricate,  $\pm$  3 mm long.

Habit: Bushy shrub. Flowers small, but crowded together to give a domed cauliflower-like appearance.

Distribn: Av, Co, Da, Ey, Ey (C), Ir, Le, St, St (C).

Flg: Sept-Dec

Note. A pink-flowered form occurs in the Ey (C) (Esperance) district.

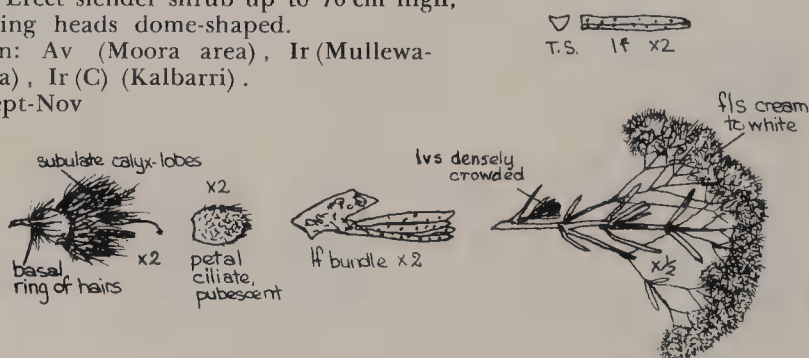
41 ***V. brownii***  
Common  
Cauliflower

## F. Leaves linear, triquetrous, 4-8 mm long.

Habit: Erect slender shrub up to 70 cm high; flowering heads dome-shaped.

Distribn: Av (Moora area), Ir (Mullewa-Ajana), Ir (C) (Kalbarri).

Flg: Sept-Nov

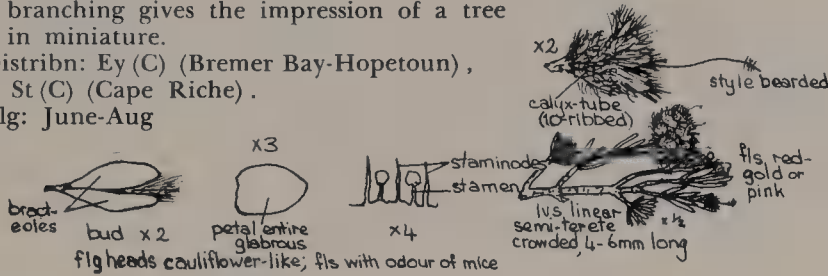
42 ***V. polytricha***  
Northern  
Cauliflower

E. Calyx-tube hirsute all over.

Habit: Low dense flat-topped bush; the branching gives the impression of a tree in miniature.

Distribn: Ey (C) (Bremer Bay-Hopetoun), St (C) (Cape Riche).

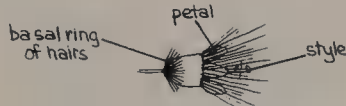
Flg: June-Aug



43 ***V. fastigiata***  
Mouse  
Featherflower

Section 5

A. Style shortly exerted.

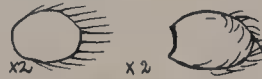


(alternate A p. 40)

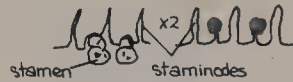
B. Petals glabrous on inner and outer surfaces.

(alternate B p. 40)

C. Petals fringed with fine cilia.



D. Stamminodes entire.

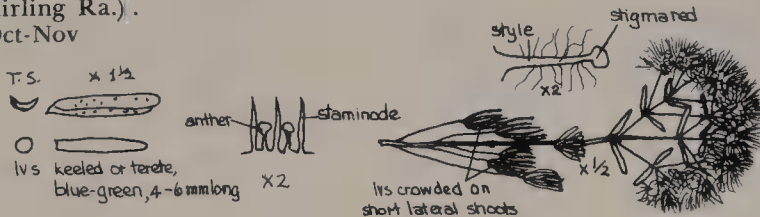


E. Flowers bright yellow.

Habit: Divaricately-branched low shrub up to 50 cm high.

Distribn: Co (Norseman, Forrestania), Da, Ey, St (Stirling Ra.).

Flg: Oct-Nov



44 ***V. multiflora***

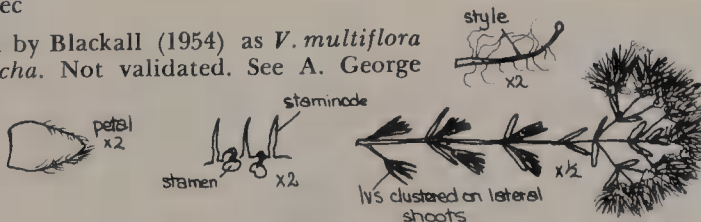
E. Flowers pink, purple or white.

Habit: Shrub up to 30 cm high.

Distribn: Av (Ballidu), Co (Bruce Rock), Ey, Le, St (Ongerup).

Flg: Sept-Dec

Note. Listed by Blackall (1954) as *V. multiflora* var. *stylotricha*. Not validated. See A. George 1972.



45 ***V. brachypoda***

## D. Staminodes fringed.

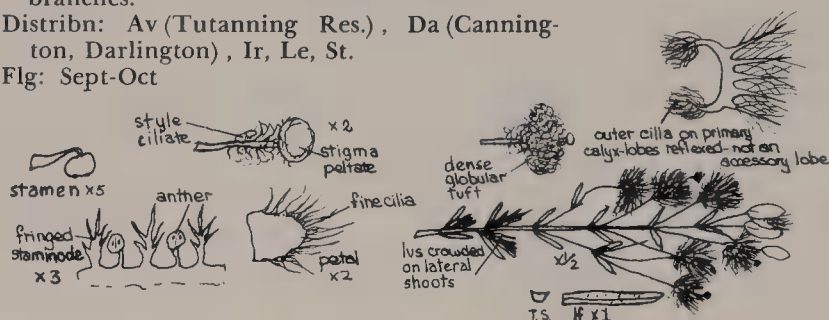


## E. Flowers white to pale yellow, but often tinged purple-red to orange.

Habit: Erect spreading shrub with slender branches.

Distribn: Av (Tutanning Res.), Da (Cannington, Darlington), Ir, Le, St.

Flg: Sept-Oct



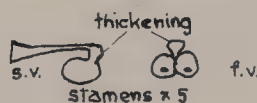
46 ***V. huegelii***  
Variegated  
Featherflower

## E. Flowers yellow.

Habit: Shrub with slender branches.

Distribn: Av, Le (Gillingarra).

Flg: Oct



Note. Bentham (1866) considered that this species (described by Turczaninow 1847) was conspecific with *V. huegelii*. Diels and Pritzel (1905) re-separated it mainly on the flower colour. They also pointed out that what Bentham had believed to be an appendage to the anthers was merely a thickening above the loculus.

47 ***V. stylosa***

## C. Petals entire.

Habit: Bushy shrub. Flowers cream-white in dome-shaped head.

41 ***V. brownii***  
(see p. 38)

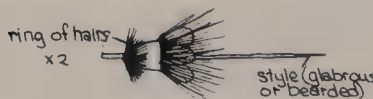
## B. Petals finely hirsute.

Habit: Erect slender shrub with heads of white dome-shaped flowers.

Distribn: Av, Ir, Ir (C).

Flg: Sept-Nov

42 ***V. polytricha***  
(see p. 38)

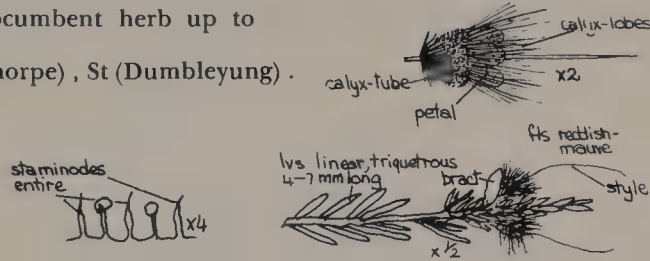
A. Style very long, much exerted.B. Petals entire,  $\pm$  pubescent outside.

## C. Style glabrous; calyx-tube pubescent in upper part.

Habit: Small slender procumbent herb up to 15 cm high.

Distribn: Co, Ey (Ravensthorpe), St (Dumbleyung).

Flg: Aug-Nov

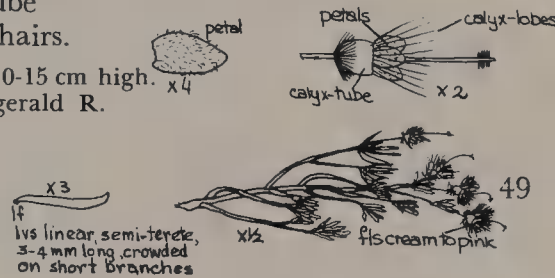
48 **V. humilis**

## C. Style bearded near apex; calyx-tube glabrous apart from basal tuft of hairs.

Habit: Low, strongly-branched shrub 10-15 cm high.

Distribn: Ey, Ey (C) (Mts Barren-Fitzgerald R. area).

Flg: Oct-Nov

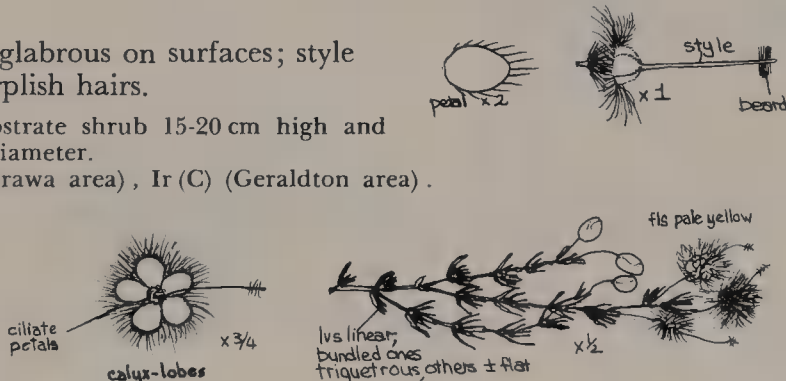
49 **V. oxylepis**  
Bonzai  
Featherflower

## B. Petals ciliate but glabrous on surfaces; style bearded with purplish hairs.

Habit: Low to prostrate shrub 15-20 cm high and up to 90 cm in diameter.

Distribn: An-Ir (Morawa area), Ir (C) (Geraldton area).

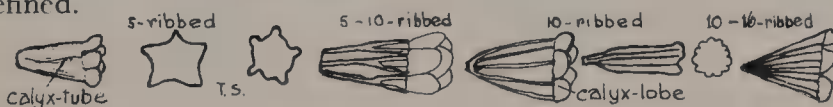
Flg: Sept-Nov

50 **V. penicillaris**5 *Thryptomene*, *Micromyrtus*\*A. Stamens more than 5, usually 10 (but from 20-30 in *T. johnsonii*).

When 10 stamens are present they are normally arranged 1 opposite each petal and each calyx-lobe (sepal).



## B. Calyx-tube with 5, 10 or more ribs, usually clearly defined.



Page

Section 1 42

\* These 2 genera are being studied by Dr J. Green (Curator, W. Aust. Herbarium), who made available several type specimens on loan to him, and made many constructive suggestions regarding this treatment. New combinations and new species await the completion of his researches.

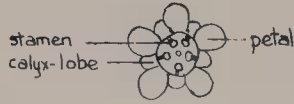
- B. Calyx-tube without ribs, usually pitted, rugose or wrinkled but sometimes appearing faintly striate.

Page



Section 2 46

A. Stamens 5.



One stamen opposite each  
calyx-lobe only.  
*Thryptomene*

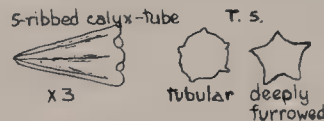


One stamen opposite each  
petal only.  
*Micromyrtus*

Section 3 49

### Section 1

A. Calyx-tube clearly 5-ribbed.

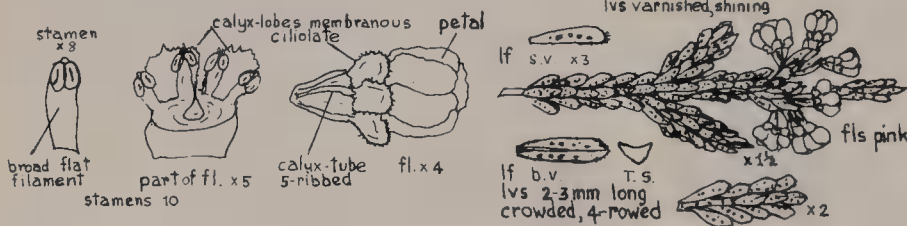
(alternate A p. 43)

- B. Filaments of stamens broad; leaves linear to linear-oblong, 3-angled, crowded in 4 rows.

Habit: Shrub up to 1 m high.

Distribn: An (Laverton), Co (int.).

Flg: Aug-Sept

1 ***M. hymenonema***

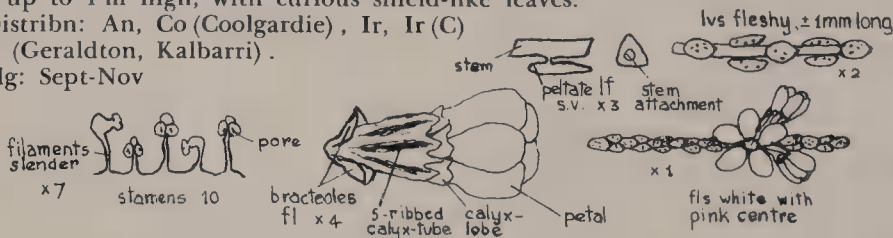
- B. Filaments of stamens slender; leaves orbicular or obovate.

- C. Leaf attachment peltate; leaves orbicular, thick.

Habit: Erect, glabrous, strongly-branched shrub up to 1 m high, with curious shield-like leaves.

Distribn: An, Co (Coolgardie), Ir, Ir (C) (Geraldton, Kalbarri).

Flg: Sept-Nov

2 ***M. peltigera***

- C. Leaf attachment basal.

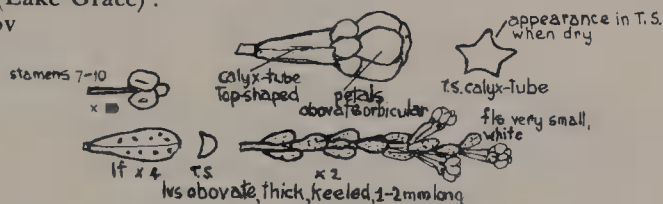


## D. Calyx-tube with 5 sharply-angled ribs.

Habit: Glabrous shrub with slender twig-like branches, up to 1 m high.

Distribn: Co (Bruce Rock, Coolgardie), Co-Ey (L. King), St (Lake Grace).

Flg: Aug-Nov



3 †***T. obovata***  
(syns: *M. drummondii*,  
*M. erichsenii*)

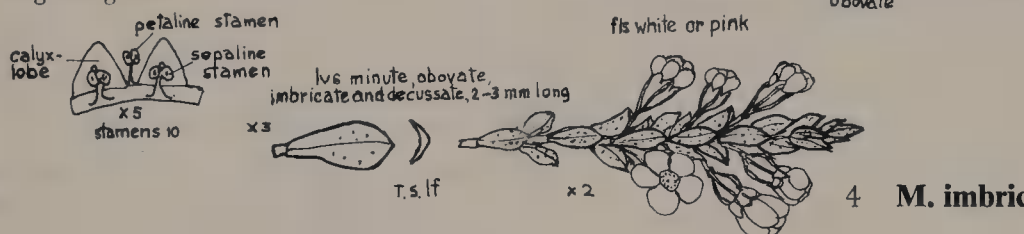
† The new combination *M. obovata* needs to be made.

## D. Calyx-tube with 5 raised tubular ribs.

Habit: Shrub up to 2 m high, with numerous slender branches.

Distribn: Co, Ey (Ravensthorpe-Esperance area).

Flg: Aug-Nov



4 ***M. imbricata***

A. Calyx-tube with 10 or more definite ribs.

## B. Calyx-tube 10-15(-16)-ribbed; stamens 10.

(alternate B p. 46)

## C. Calx-tube cylindrical, 10-ribbed.



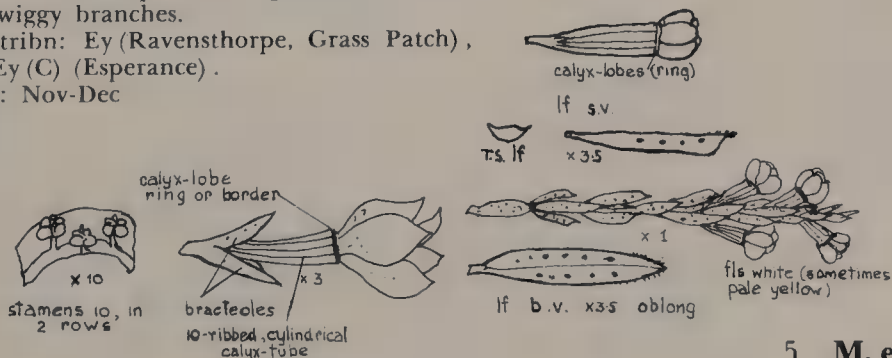
## D. Flowers white (rarely pale yellow) or pink.

## E. Calyx-lobes reduced to a narrow ring.

Habit: Shrub up to 1 m high, with slender erect, twiggy branches.

Distribn: Ey (Ravensthorpe, Grass Patch), Ey (C) (Esperance).

Flg: Nov-Dec



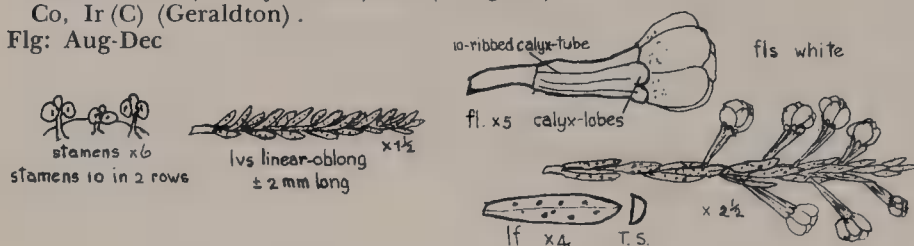
5 ***M. elobata***

## E. Calyx-lobes distinct, orbicular.

Habit: Bushy shrub 1-2 m high with slender almost filiform branches.

Distribn: An-Ir (Perenjori area), Av (Bungulla), Co, Ir (C) (Geraldton).

Flg: Aug-Dec

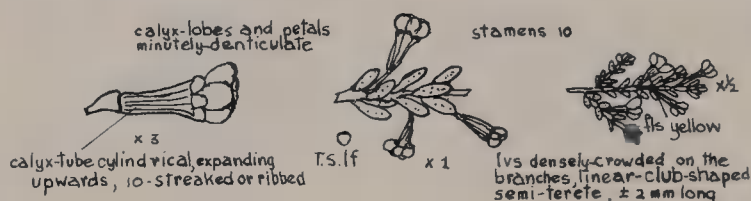
6 ***M. racemosa***

## D. Flowers sulphur-yellow.

Habit: Glabrous shrub up to 2 m high, with numerous short, rigidly divaricate branches.

Distribn: An (Mt Magnet - Paynes Find area).

Flg: Sept-Oct

7 ***M. sulphurea***

## C. Calyx-tube widening markedly from the base to the top; 10-15 (-16)-ribbed.



## D. Leaves linear to narrow oblong-obovate.

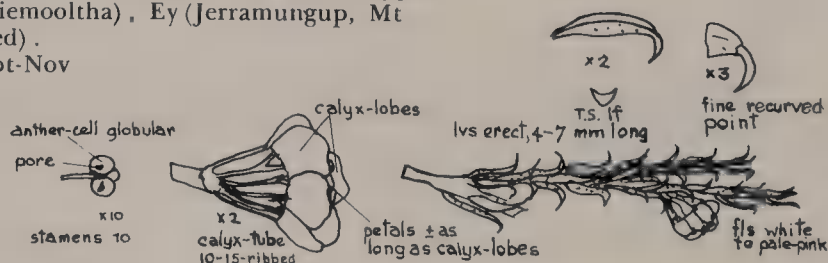


## E. Leaves with a prominently-recurved point.

Habit: Erect shrub with slender branches, up to 1 m high.

Distribn: Av (Welbungin), Co (Kununoppin, Widgiemooltha), Ey (Jerramungup, Mt Ragged).

Flg: Sept-Nov

8 ***T. australis***  
Hook-leaf  
Thryptomene

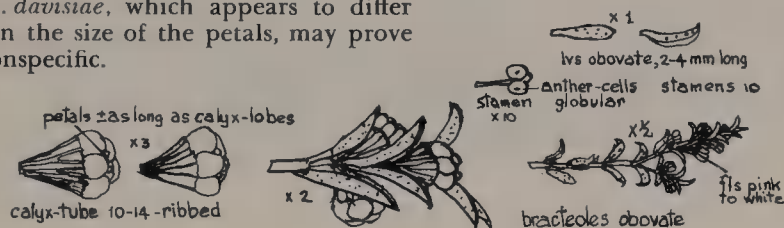
E. Leaves  $\pm$  recurved at apex but without a prominent point.

Habit: Shrub with numerous erect slender branches.

Distribn: Da (Moore R.), Ir (E. Yuna), Ir (C) (Geraldton), Le (Hill R., Badgingarra).

Flg: Aug-Nov

Note. *T. davisiae*, which appears to differ mainly in the size of the petals, may prove to be conspecific.



9 *T. prolifera*

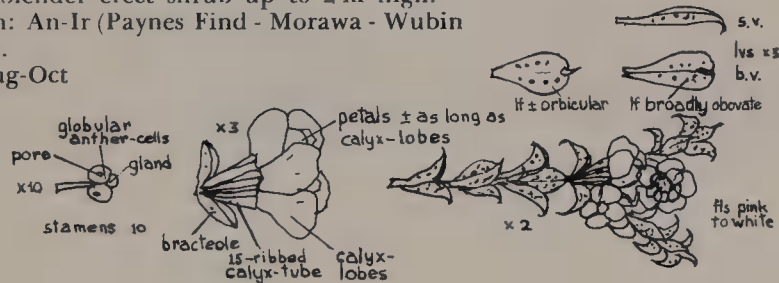
D. Leaves broadly obovate to  $\pm$  orbicular or elliptic.

E. Leaves with a mucrone (sharp terminal point).

Habit: Slender erect shrub up to 2 m high.

Distribn: An-Ir (Paynes Find - Morawa - Wubin area).

Flg: Aug-Oct



10 *T. mucronulata*

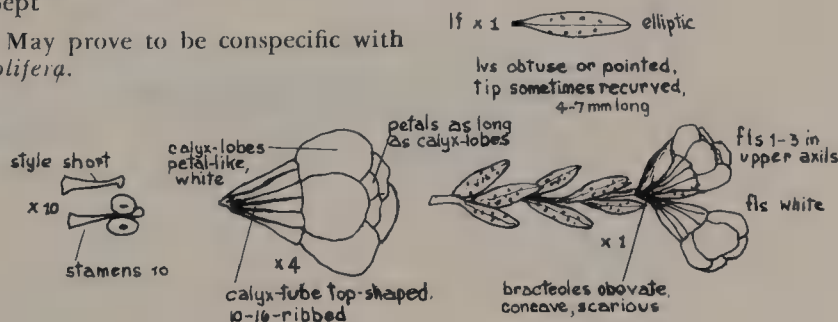
E. Leaves without mucrone.

Habit: Very leafy shrub 1.3-1.6 m high.

Distribn: Ir (Mingenew area).

Flg: Sept

Note. May prove to be conspecific with *T. prolifera*.



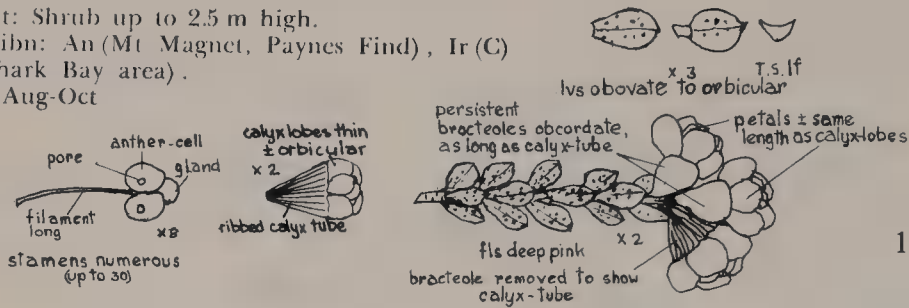
11 *T. dielsiana*

B. Calyx-tube with numerous (16-30) ribs and 20-30 stamens.

Habit: Shrub up to 2.5 m high.

Distribn: An (Mt Magnet, Paynes Find), Ir (C) (Shark Bay area).

Flg: Aug-Oct



12 ***T. johnsonii***

**Section 2**

A. Leaves sub-linear, oblong, obovate, elliptical or orbicular.

(alternate A p. 48)

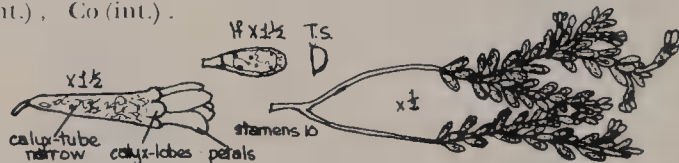
B. Leaves not imbricate, 2-3 mm or more long.

C. Flowers yellow; calyx-tube ± cylindrical.

Habit: Glabrous shrub.

Distribn: An (int.), Co (int.).

Flg: Sept



13 ***T. stenocalyx***

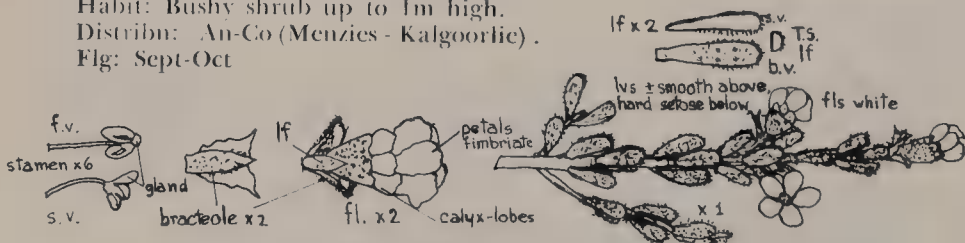
C. Flowers white or pink; calyx-tube top- or bell-shaped.

D. Leaves thick, sublinear, oblong, keeled, rough, with setae below (sometimes ± smooth).

Habit: Bushy shrub up to 1m high.

Distribn: An-Co (Menzies - Kalgoorlie).

Flg: Sept-Oct



14 ***T. aspera***

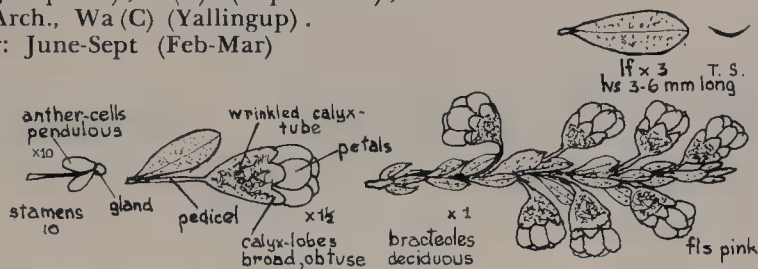
D. Leaves elliptic or obovate, smooth above and below.

E. Flowers on pedicels; petals longer than calyx-lobes.

Habit: Spreading shrub 1-1.5 m high.

Distribn: Ey, Ey (C) (Bremer Bay), St (Porongurup Ra.), St (C) (Cape Riche), Recherche Arch., Wa (C) (Yallingup).

Flg: June-Sept (Feb-Mar)



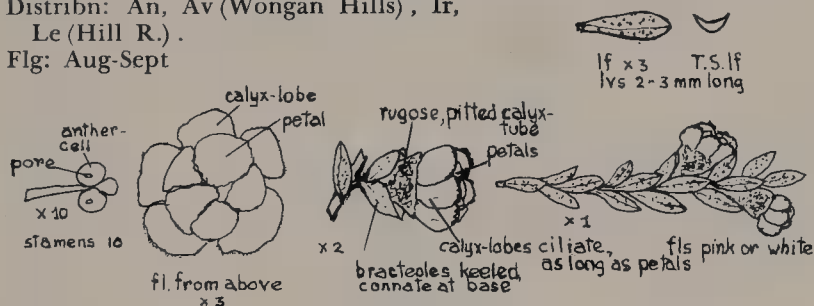
15 ***T. saxicola***  
Rock *Thryptomene*

E. Flowers almost sessile; petals  $\pm$  same length as calyx-lobes.

Habit: Erect shrub up to 1 m high.

Distribn: An, Av (Wongan Hills), Ir, Le (Hill R.).

Flg: Aug-Sept



16 ***T. racemulosa***

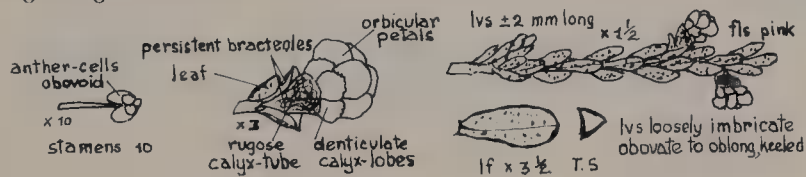
B. Leaves imbricate (loosely to very closely), 1-2 mm long.

C. Calyx-lobes minutely denticulate.

Habit: Erect shrub up to 2 m high, with  $\pm$  horizontal branches.

Distribn: Ir (Northampton), Ir (C) (Chapman R., Murchison R.).

Flg: Aug-Nov



17 ***T. denticulata***

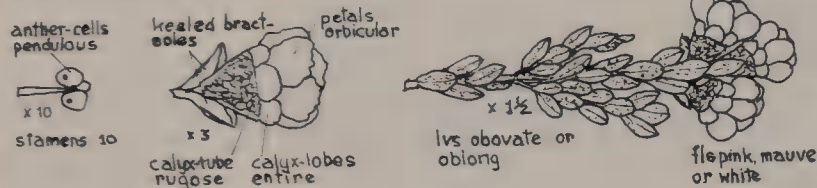
C. Calyx-lobes entire.

- D. Leaves loosely imbricate, obovate or oblong, 3-angled, keeled, 1-2 mm long.

Habit: Densely-branched shrub, 1-2 m high.

Distribn: Ir (Ajana, Yuna), Ir (C) (Murchison R.-Shark Bay).

Flg: Aug-Oct



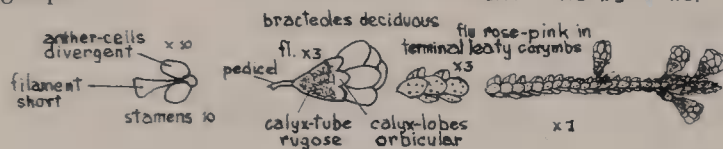
18 ***T. baeckeacea***

- D. Leaves closely imbricate, orbicular, concave, not keeled, 0.5-1 mm long.

Habit: Shrub up to 50 cm high.

Distribn: Ir (Northampton), Ir (C) (Kalbarri).

Flg: Aug-Sept



19 ***T. stronglyphylla***

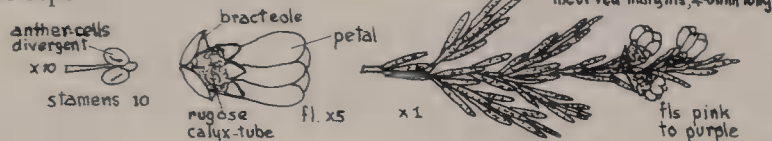
#### A. Leaves linear.

##### B. Flowers sessile.

Habit: Shrub up to 1.5 m high.

Distribn: Ir (C) (Geraldton area).

Flg: June-Sept



20 ***T. stenophylla***

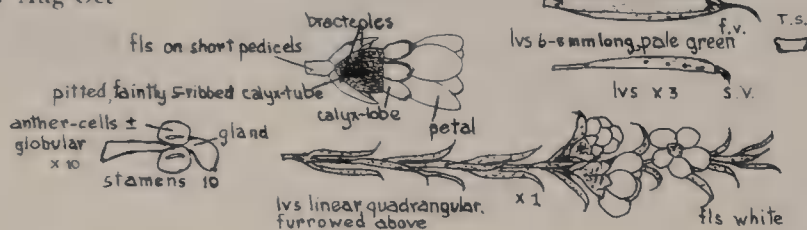
##### B. Flowers pedicellate.

- C. Leaves appressed and with long recurved mucrone; calyx-tube pitted and faintly ribbed.

Habit: Much-branched shrub up to 1.5 m high.

Distribn: Co (Norseman, Hyden), Ey (north of Esperance).

Flg: Aug-Oct



21 ***T. appressa***

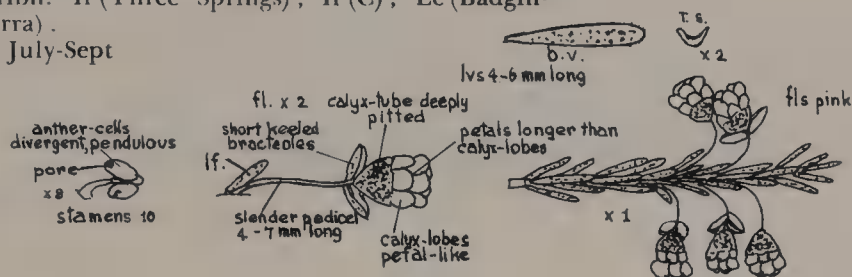


C. Leaves not appressed, very obtuse; calyx-tube pitted, rugose.

Habit: Small, much-branched shrub up to 50 cm high.

Distribn: Ir (Three Springs), Ir (C), Le (Badgin-garra).

Flg: July-Sept



22 *T. hyporhytis*

### Section 3

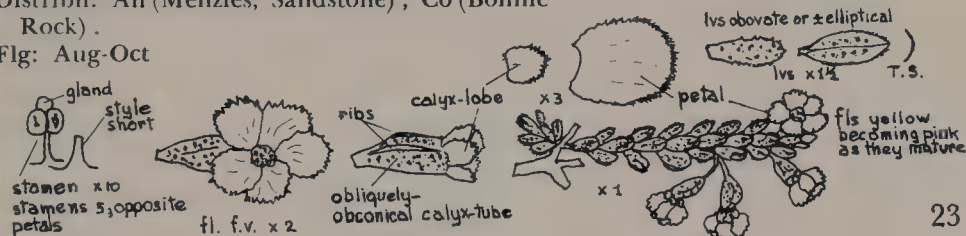
A. Flowers pale-yellow to yellow, becoming pink, sometimes purplish-red; calyx-tube obliquely-obconical, 5-ribbed, granular.

B. Calyx-lobes markedly denticulate.

Habit: Slender erect shrub up to 1 m high.

Distribn: An (Menzies, Sandstone), Co (Bonnie Rock).

Flg: Aug-Oct



23 *M. flaviflora*

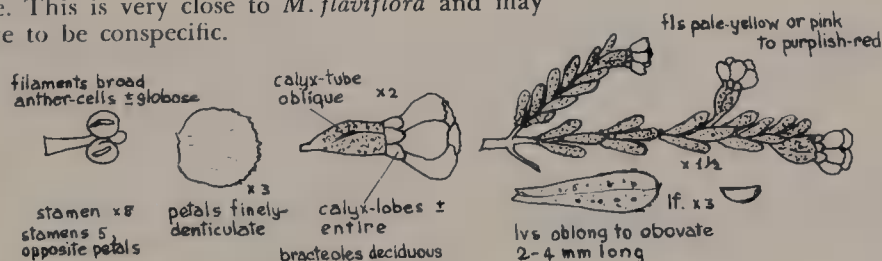
B. Calyx-lobes  $\pm$  entire.

Habit: Slender branching shrub.

Distribn: An (Menzies, Sandstone), Co (Comet Vale).

Flg: Sept

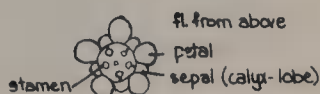
Note. This is very close to *M. flaviflora* and may prove to be conspecific.



24 *M. trachycalyx*

A. Flowers white or pink.

B. Stamens 5, opposite the sepals (calyx-lobes).



(alternate B p. 51)

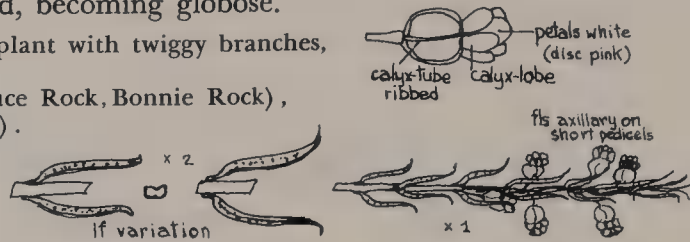
## C. Calyx-tube globose to urn-shaped.

## D. Calyx-tube 5-ribbed, becoming globose.

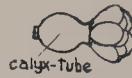
Habit: Very slender plant with twiggy branches, up to 1 m high.

Distribn: Av, Co (Bruce Rock, Bonnie Rock), Ir (Morawa, Wubin).

Flg: Aug-Sept

25 ***T. tenella***

## D. Calyx-tube smooth, urn-shaped.

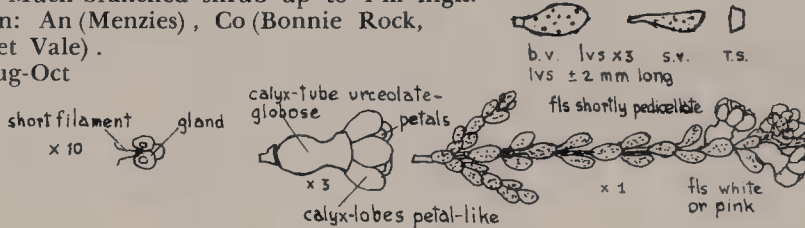


## E. Leaves obovate, thick.

Habit: Much-branched shrub up to 1 m high.

Distribn: An (Menzies), Co (Bonnie Rock, Comet Vale).

Flg: Aug-Oct

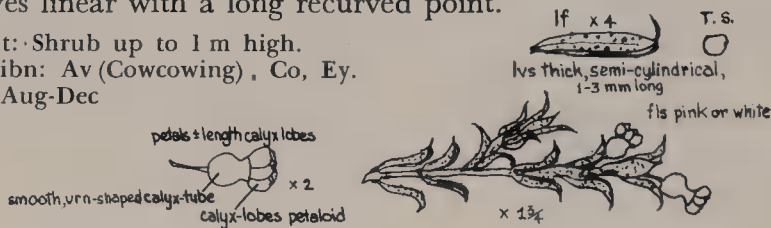
26 ***T. urceolaris***

## E. Leaves linear with a long recurved point.

Habit: Shrub up to 1 m high.

Distribn: Av (Cowcowing), Co, Ey.

Flg: Aug-Dec

27 ***T. kochii***

## C. Calyx-tube bell-shaped.

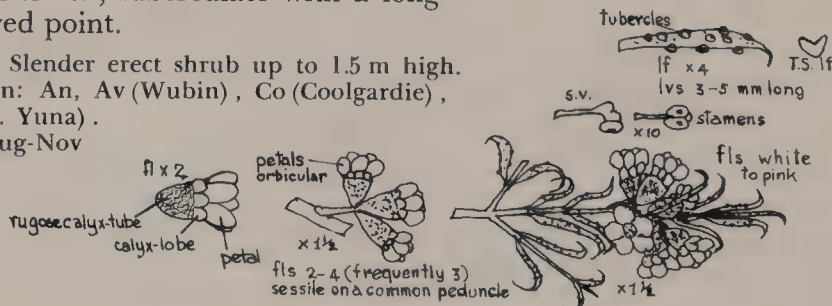


## D. Leaves linear, tuberculate with a long recurved point.

Habit: Slender erect shrub up to 1.5 m high.

Distribn: An, Av (Wubin), Co (Coolgardie), Ir (E. Yuna).

Flg: Aug-Nov

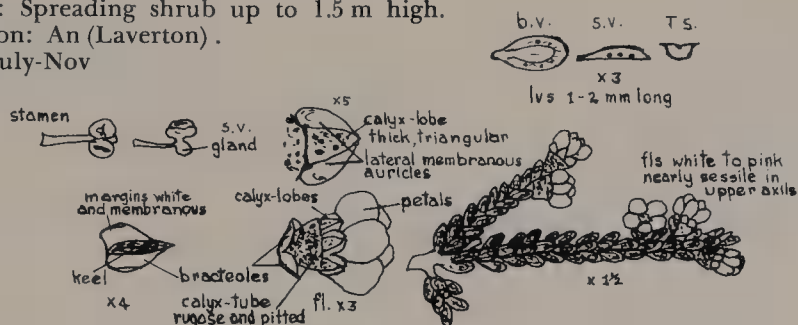
28 ***T. tuberculata***

## D. Leaves obovate, thick, very obtuse.

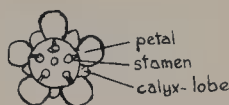
Habit: Spreading shrub up to 1.5 m high.

Distribn: An (Laverton).

Flg: July-Nov

29 *T. maisonneuvei*

## B. Stamens 5, opposite the petals.

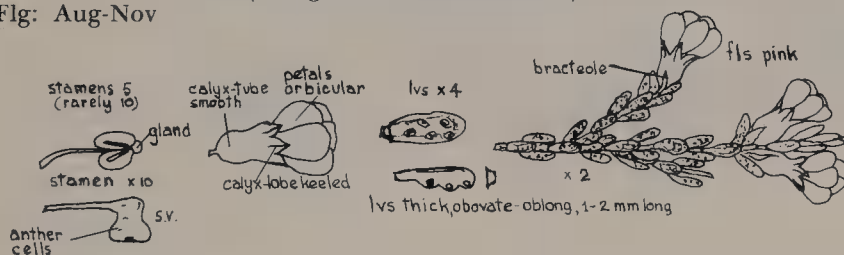


## C. Calyx-tube bell-shaped to urn-shaped, smooth.

Habit: Erect, strongly-developed shrub 1-2 m high.

Distribn: An, Av, Co (Coolgardie, Southern Cross).

Flg: Aug-Nov

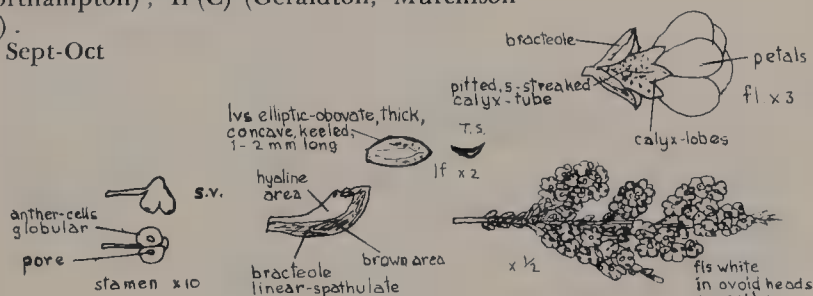
30 *M. rosea*

## C. Calyx-tube cylindrical to top-shaped, pitted.

Habit: An erect glabrous shrub up to 75 cm high.

Distribn: An (Mt Magnet), Ir (Three Springs, Northampton), Ir (C) (Geraldton, Murchison R.).

Flg: Sept-Oct

31 *M. hursthousei*

## 6 *Pileanthus*\*

(Coppercups)

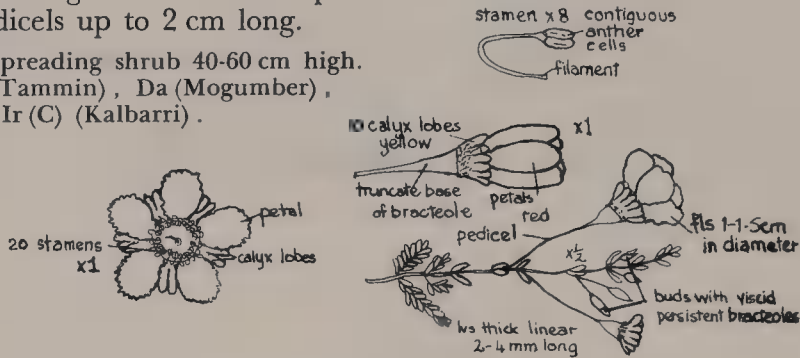
### A. Anther-cells contiguous on club-shaped end of filament; pedicels up to 2 cm long.

Habit: Erect spreading shrub 40-60 cm high.

Distribn: Av (Tammin), Da (Mogumber),

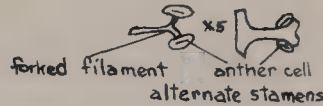
Ir (Eradu), Ir (C) (Kalbarri).

Flg: Aug-Dec



1 ***P. peduncularis***  
Coppercups

### A. Filaments forked, each branch bearing 1 anther-cell; leaves linear; pedicels short or long.

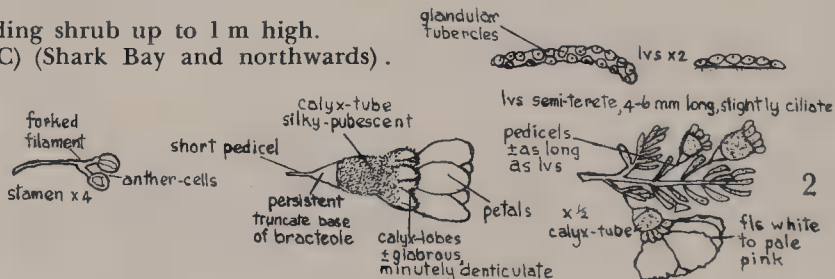


### B. Pedicels less than 1 cm long; leaves very obtuse, often tuberculate.

Habit: Spreading shrub up to 1 m high.

Distribn: Ir (C) (Shark Bay and northwards).

Flg: Aug-Nov



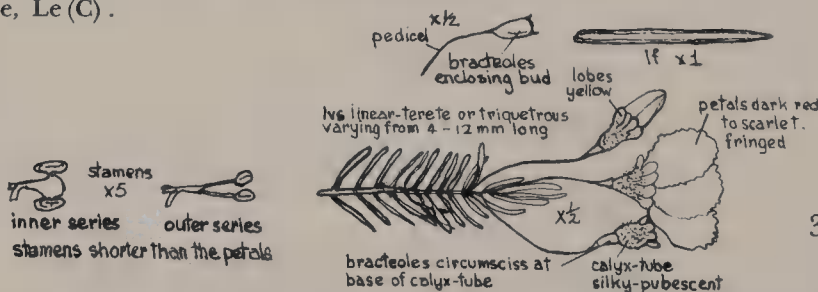
2 ***P. limacis***  
Coastal  
Coppercups

### B. Pedicels 1-3.5 cm long; leaves linear-terete, not tuberculate.

Habit: Shrub 50 cm-1.5 m high with slender erect stems.

Distribn: Da (Moore R. area), Ir, Ir (C) (Murchison R.), Le, Le (C).

Flg: Oct-Jan



3 ***P. filifolius***  
Summer  
Coppercups


\* Erickson *et al.* (1972) report that at least two, as yet undescribed species, occur in the Murchison River area.

7 *Calytrix*


Page

- A. Flowers yellow.

Section 1
- A. Flowers white, pink or lilac.
- B. Bracteoles free to base.



Section 2      55
- B. Bracteoles connate for ± half to two-thirds of their length.



Section 3      59

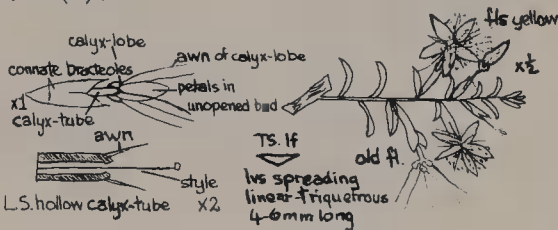
Section 1

- A. Bracteoles connate for ± half their length; calyx-tube hollow.

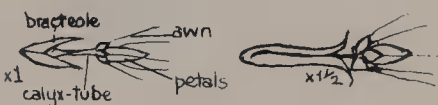
Habit: Shrub 50 cm-1 m high.

Distribn: Av (Wongan Hills), Da (Mundaring, Gingin), Da (C) (Kings Park), Ir, Ir (C), Le.

Flg: Aug-Dec



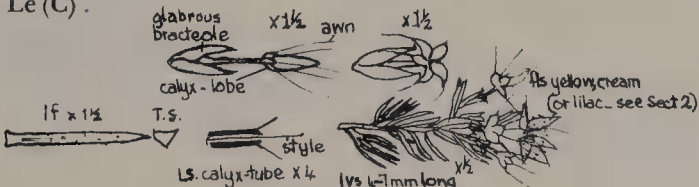
1      ***C. angulata***
- A. Bracteoles free to base.
- B. Bracteoles more than half as long as calyx-tube.


- C. Calyx-awns not twice as long as petals.
- D. Bracteoles glabrous; upper part of calyx-tube hollow.

Habit: Shrub under 50 cm high.

Distribn: Da (Moore R.), Ir (Northampton), Ir (C) (Kalbarri), Le (C).

Flg: Sept-Dec



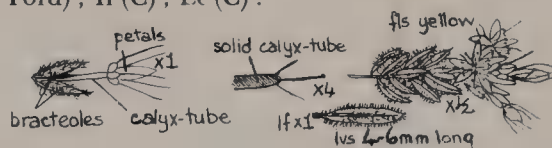
2      ***C. depressa***

D. Bracteoles hirsute; upper part of calyx-tube solid.

Habit: Shrub to 1 m; flowers in heads; softly pubescent plant.

Distribn: Da (C) (Regans Ford), Ir (C), Le (C).

Flg: Oct-Nov



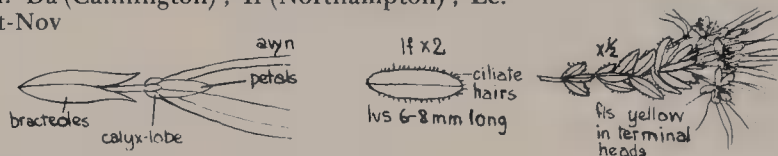
3 ***C. puberula***

C. Calyx-awns at least twice as long as petals.

Habit: Erect shrub up to 1 m high.

Distribn: Da (Cannington), Ir (Northampton), Le.

Flg: Oct-Nov



4 ***C. aurea***

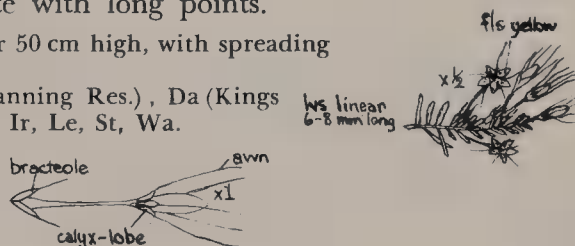
B. Bracteoles under half the length of calyx-tube.

C. Bracteoles acuminate with long points.

Habit: Subshrub under 50 cm high, with spreading leaves.

Distribn: An, Av (Tutanning Res.), Da (Kings Park, Yanchep), Ey, Ir, Le, St, Wa.

Flg: (Oct), Dec-Feb



5 ***C. flavescens***  
Summer  
Starflower

Stout and more rigid plant with rather larger flowers. (Between Moore and Murchison Rivers.)

5a ***C. flavescens***  
var. ***drummondii***

Leaves short, spreading; bracteoles short, narrow.

5b ***C. flavescens***  
var. ***curtophylla***

A more diffuse and slender plant with smaller flowers and less pointed bracteoles.

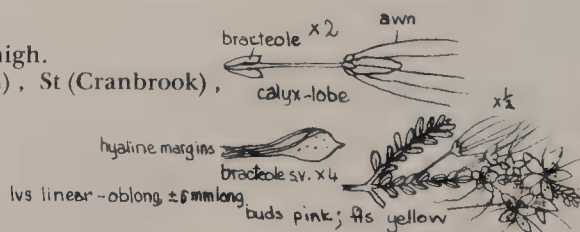
5c ***C. flavescens***  
var. ***tenella***

C. Bracteoles spatulate, obtuse or shortly-pointed.

Habit: Shrub up to 70 cm high.

Distribn: Ey (C) (Mt Barren), St (Cranbrook), St (C) (Albany).

Flg: Nov-Jan



6 ***C. asperula***  
Brush  
Starflower

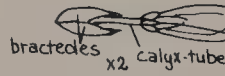
Leaves slender, flowers small.

6a ***C. asperula***  
var. ***gracilis***



## Section 2

- A. Bracteoles long (usually at least half as long as the calyx-tube).

(alternate A p. 57)

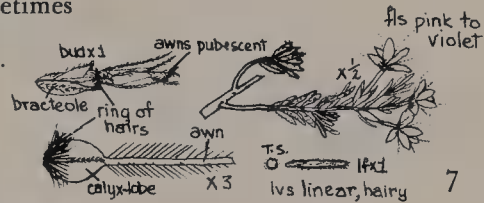
- B. Lobes of calyx hirsute; awns plumose-ciliate.

- C. Dense ring of hairs at base of calyx-lobes.

Habit: Bushy shrub up to 50 cm high; sometimes low and  $\pm$  prostrate.

Distribn: An, Av-Co (Bencubbin - Koorda).

Flg: Oct-Nov

7 ***C. plumulosa***

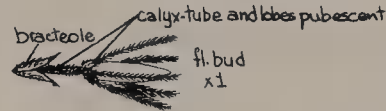
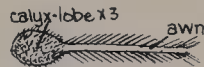
- C. Ring of hairs absent from base of calyx-lobes.

- D. Bracteoles acute.

Habit: Spreading erect shrub up to 1 m high.

Distribn: Av (York), Da (Moore R.), Ir, Ir (C), Le.

Flg: Aug-Nov

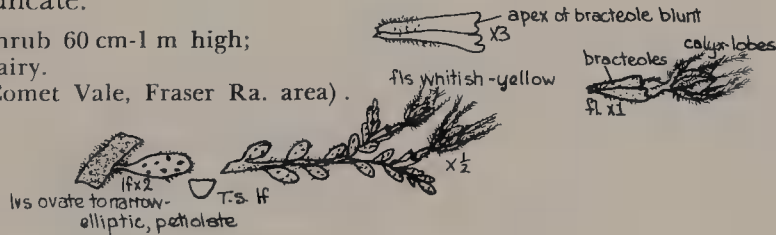
8 ***C. strigosa***

- D. Bracteoles truncate.

Habit: Erect shrub 60 cm-1 m high; branchlets hairy.

Distribn: Co (Comet Vale, Fraser Ra. area).

Flg: Nov

9 ***C. watsonii***

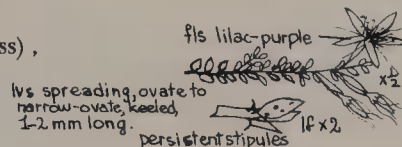
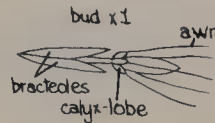
- B. Lobes of calyx and awns glabrous.

- C. Leaves under 5 mm long, ovate, triquetrous, often with stipules.

Habit: Glabrous, much-branched shrub 70 cm-1 m high.

Distribn: Av (Cunderdin), Co (Southern Cross), Ey (L. King).

Flg: Aug-Oct

10 ***C. stipulosa***

C. Leaves 5 mm or more long.

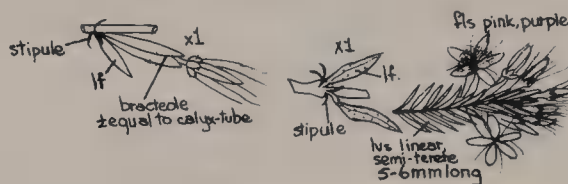
D. Leaves with conspicuous stipules.

Habit: Glabrous shrub up to 40 cm high.

Distribn: Av (Tammin), Da (Gosnells), Ey-St (L.

King - Ongerup).

Flg: Sept-Oct



11 ***C. breviseta***

D. Leaves usually without stipules.

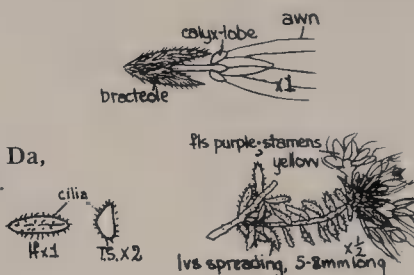
E. Bracteoles densely hirsute;  
stem-leaves ciliate.

Habit: Shrub up to 1 m high.

Distribn: Av, Co (Southern Cross), Da,

Da (C) (Yanchep), Ir, Ir (C), Le.

Flg: Aug-Nov



12 ***C. sapphirina***

E. Bracteoles and leaves glabrous.

F. Lower stem-leaves scattered.

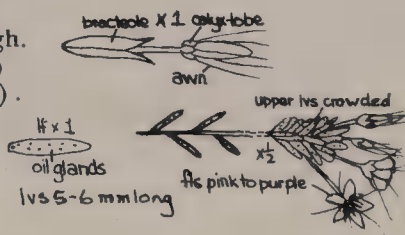
G. Bracteoles less than 9 mm long.

Habit: Slender shrub up to 50 cm high.

Distribn: Co (Fraser Ra.), Ey, Ey (C)

(Esperance), St (Mt Barker), St (C).

Flg: Sept-Oct



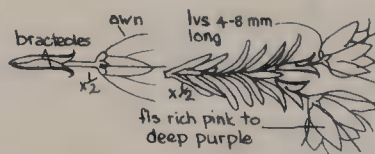
13 ***C. tenuiramea***

G. Bracteoles more than 10 mm long.

Habit: Slender erect shrub 20-30 cm  
high; flowers large with petals up  
to 2 cm long.

Distribn: Av, Ir, Le (Moora-Eneabba  
area).

Flg: Dec-Feb



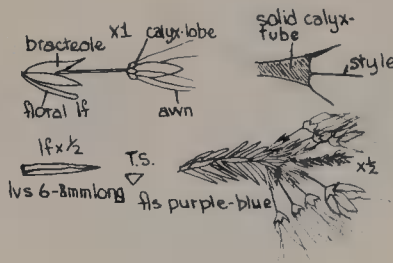
14 ***C. superba***  
Superb  
Starflower

F. Lower and upper stem-leaves dense,  
clustered.



## G. Calyx-tube solid.

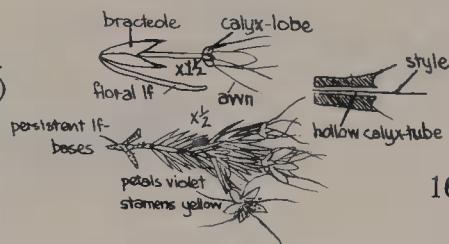
Habit: Erect shrub 15-45 cm high.  
 Distribn: Ey, Ey (C), St, St (C).  
 Flg: Sept-Oct

15 ***C. simplex***

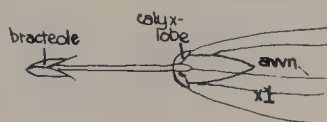
## G. Calyx-tube hollow.

## H. Calyx-tube not longer than floral leaves.

Habit: Dense bush up to 25 cm high.  
 Distribn: Da (Mogumber), Ir, Ir (C)  
 (Geraldton, Kalbarri), Le.  
 Flg: Sept-Dec

16 ***C. tenuifolia***

Leaves longer and more rigid; flowers larger.

16a ***C. tenuifolia***  
var. **rigidior**H. Calyx-tube longer than floral leaves;  
flowers lilac.2 ***C. depressa***  
(see p. 53)A. Bracteoles short, much less than half the length of the calyx-tube.B. Stamens  $\pm$  10.

Habit: Subshrub 50 cm high, many-branched at base.  
 Distribn: Ey (Jerramungup), Ey (C) (Esperance-Israelite Bay).  
 Flg: Oct-Dec

17 ***C. decandra***  
Pink  
Starflower

## B. Stamens more than 20.

## C. Calyx hirsute or pubescent.

8 ***C. strigosa***  
(see p. 55)

## C. Calyx glabrous.

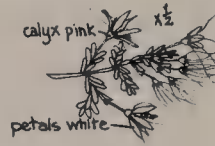
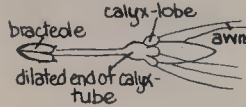
## D. Calyx-tube slightly or markedly dilated at apex.

E. Leaves 3-6 mm long; petals white.

Habit: Shrub up to 1.5 m high.

Distribn: Ey (Jerramungup), Ey (C) (Stokes Inlet), Recherche Arch., St (Cranbrook), St (C).

Flg: Oct-Nov



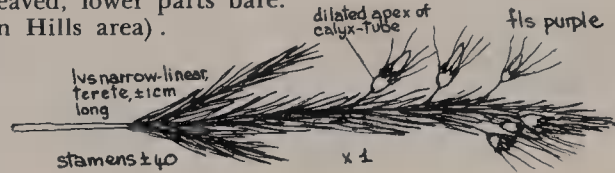
18 ***C. tetragona***

E. Leaves  $\pm$  1 cm long; petals purple.

Habit: Glabrous shrub; upper parts of branches densely leaved, lower parts bare.

Distribn: Av (Wongan Hills area).

Flg: Not recorded



19 ***C. stowardii***

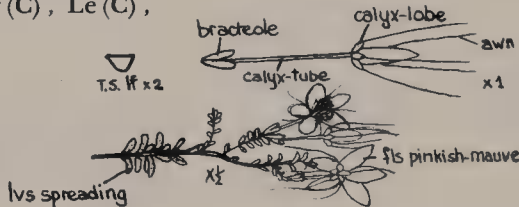
D. Calyx-tube not dilated at end.

E. Leaves keeled, triquetrous, oblong or linear.

Habit: Glabrous shrub 50 cm-1 m high.

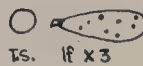
Distribn: Av, Co, Da (Jandakot, Guildford), Da (C) (Kings Park), Ir, Ir (C), Le (C), St (Narrogin).

Flg: Dec-May



20 ***C. fraseri***  
Pink  
Summer Calytrix

E. Leaves not keeled,  $\pm$  club-shaped, cylindrical.



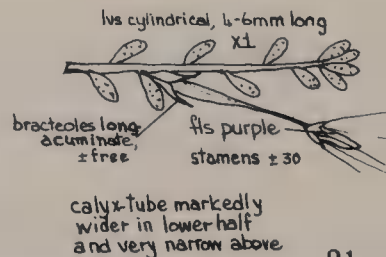
F. Bracteoles long-acuminate; calyx-tube solid.

Habit: Glabrous shrub with whitish stems.

Distribn: Co (Coolgardie area).

Flg: Oct

Note. Blackall (1954) included a variety *desolata* under *C. birdii*. Whether this referred to *C. desolata* (no 28) is not clear. *C. desolata* shows some points of similarity, but rather more of difference from *C. birdii*.



21 ***C. birdii***

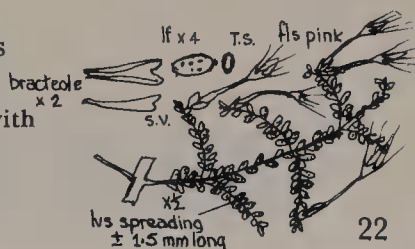
F. Bracteoles obtuse; calyx-tube hollow.

G. Bracteoles linear, cuneate; branches divaricate.

Habit: Glabrous, scrub-like plant with tortuous divaricate branches and very spreading leaves.

Distribn: Ir (C) (Lower Murchison R.).

Flg: Not known



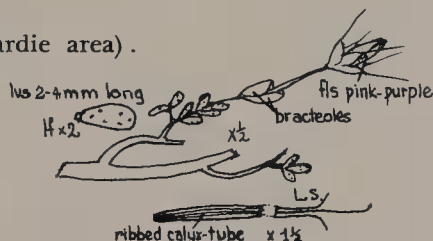
22 *C. granulosa*

G. Bracteoles ovate-orbicular; leaves ascending,  $\pm$  club-shaped.

Habit: Shrub 30-50 cm high.

Distribn: Co (Merredin-Coolgardie area).

Flg: Sept



23 *C. cresswellii*

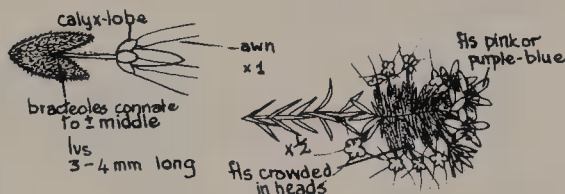
### Section 3

A. Bracteoles hirsute.

Habit: Straggling pubescent shrub up to 50 cm high.

Distribn: Av (Tammin, York), Co, Da (Gingin), Ir (C), Le (Eneabba).

Flg: Aug-Dec



24 *C. empetroides*

A. Bracteoles glabrous (sometimes viscid or glandular-muricate).

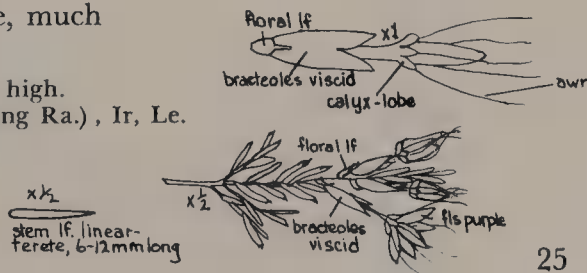
B. Bracteoles  $\pm$  as long as calyx-tube; leaves 0.5-1 cm long.

C. Floral leaves dilated at base, much shorter than stem-leaves.

Habit: Erect shrub, 50 cm-1 m high.

Distribn: Av (Moora), Da (Darling Ra.), Ir, Le.

Flg: Aug-Oct



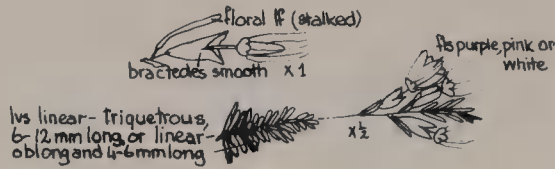
25 *C. glutinosa*

## C. Floral leaves not dilated at base.

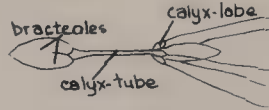
Habit: Glabrous shrub 30-60 cm high.

Distribn: Av, Da (major occurrence), St, St (C).

Flg: Oct-Dec

26 *C. variabilis*

## B. Bracteoles short, up to half the length of calyx-tube.



## C. Stamens numerous (at least 20).

(alternate C p. 62)

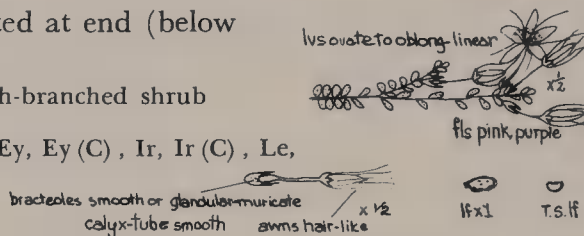
## D. Stem-leaves 1-1.5 (rarely 2) mm long.

## E. Calyx-tube not dilated at end (below calyx-lobes).

Habit: Glabrous, much-branched shrub 30-60 cm high.

Distribn: Av, Co, Da, Ey, Ey (C), Ir, Ir (C), Le, St, St (C), Wa (C).

Flg: June-Oct

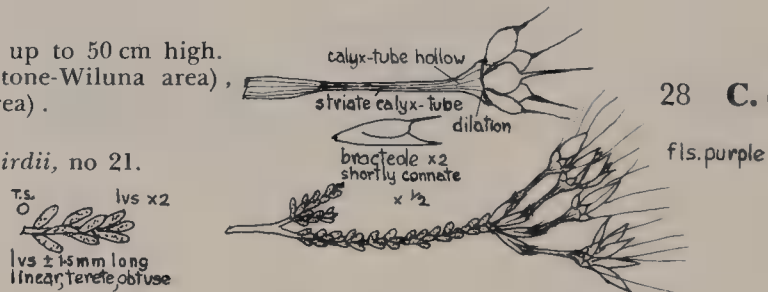
27 *C. brachyphylla*

## E. Calyx-tube dilated at end (below calyx-lobes).

Habit: Small shrub up to 50 cm high.

Distribn: An (Sandstone-Wiluna area), Co (Coolgardie area).

Flg: July-Nov

See note under *C. birdii*, no 21.28 *C. desolata*

fls. purple

## D. Stem-leaves 2 mm or more long.

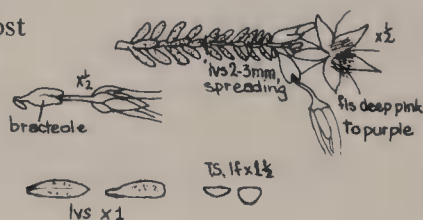
## E. Stem-leaves 2-4 mm long.

## F. Stem-leaves flat, trigonate to almost terete; style deciduous.

Habit: Much-branched shrub up to 1 m high.

Distribn: An, Av, Da (Mogumber), Ir (Ajana), Ir (C) (Geraldton).

Flg: Aug-Dec

29 *C. brevifolia*

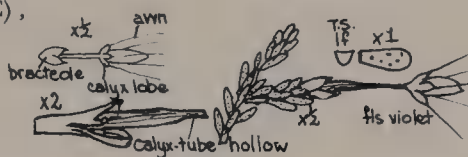


F. Stem-leaves oblong-triangular,  
thick; styles persistent.

Habit: Glabrous, much-branched shrub  
up to 50 cm high.

Distribn: An, Av, Co, Da, Ir, Ir (C),  
Le, St.

Flg: June-Oct



30 *C. oldfieldii*

E. Stem-leaves 5-15 mm long.

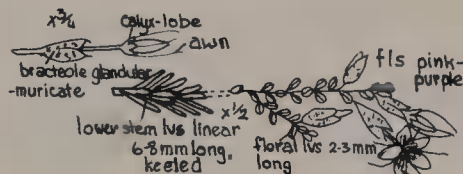
(Except *C. muricata* var. *parvifolia*).

F. Bracteoles glandular-muricate.

Habit: Straggly plant up to 1 m high;  
upper and floral leaves variable  
in length.

Distribn: Ir (Ajana-Eradu), Ir (C)  
(Geraldton-Kalbarri).

Flg: July-Oct



31 *C. muricata*

Leaves less than 5 mm long.

Distribn: Murchison R.

31a *C. muricata*  
var. *parvifolia*

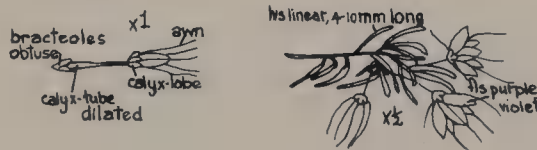
F. Bracteoles  $\pm$  smooth.

G. Bracteoles narrow, obtuse.

Habit: Glabrous heath-like shrub  
30-60 cm high.

Distribn: An, Av, Co, Da, Ir, Le, St.

Flg: Sept-Dec



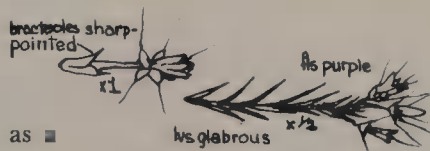
32 *C. gracilis*

G. Bracteoles ending in subulate points.

Habit: Stems slender, erect, mostly simple,  
numerous from a thickened stock,  
usually hairy, 10-15 cm high.

Distribn: Da (Darling Ra.).

Flg: Dec



33 *C. stenophylla*

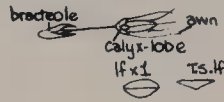
Note. Regarded by Blackall (1954) as a  
variety of *C. gracilis*. Not validated.

## C. Stamens 7-10 (rarely 15).

Habit: Shrub up to 50 cm high.

Distribn: Co (Hyden area), Ey (C) (Fitzgerald R.-Esperance), St (C) (Albany).

Flg: Aug-Oct (Jan)

Note. Regarded by Blackall (1954) as a variety of *C. brachyphylla* (no 27). Not validated.34 ***C. leschenaultii***8 *Lhotskya*†, *Wehlia*A. Flowers yellow or creamy-white.

## B. Flowers solitary in each leaf axil along branches.

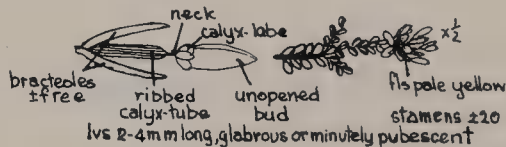


## C. Calyx-tube narrowed into a short neck.

Habit: Shrub with rather slender erect branches.

Distribn: Da (Bindoon, Moore R.), Le (Watheroo).

Flg: Sept-Dec

1 ***L. brevifolia***

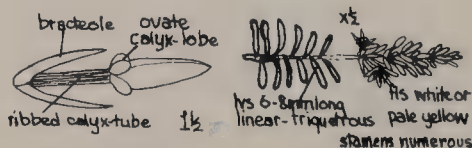
## C. Calyx-tube not narrowed into a neck.

## D. Calyx-tube 7-10-ribbed.

Habit: Erect heath-like shrub, 50 cm-1.3 m high.

Distribn: Ey (C) (Bremer Bay - Cape Arid), St, St (C), Wa (C).

Flg: Oct-Dec

2 ***L. ericoides***

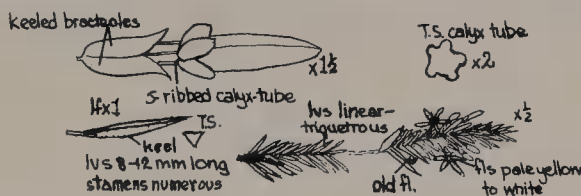
† Court (1957) (see Willis 1972) considered *Lhotskya* to be congeneric with *Calytrix* in Victoria. In this treatment the early separation is kept as the principal differences between the two genera appear to be maintained in W. Aust.

## D. Calyx-tube 5-ribbed.

Habit: Erect shrub with twiggy  
branches 50 cm-1.5 m high.

Distribn: Av, Da (Lesmurdie), Ir, Le,  
St, St (C).

Flg: Sept-Dec



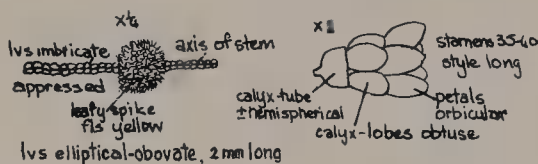
3 *L. acutifolia*

## B. Flowers in leafy globular clusters or spikes, terminal, or the axis growing on.

Habit: Dense many-branched shrub up to 40 cm  
high, with dense grey, rough bark; leaves a  
bright and shining green.

Distribn: An (Mullewa-Yalgoo area), Ir,  
Ir (C) (Kalbarri), Le.

Flg: Aug-Oct



4 *W. aurea*

## A. Flowers magenta to purple.

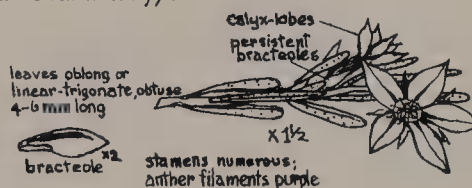
## B. Flowers in axils of leaves along branches.

## C. Calyx-lobes acute.

Habit: Glabrous shrub.

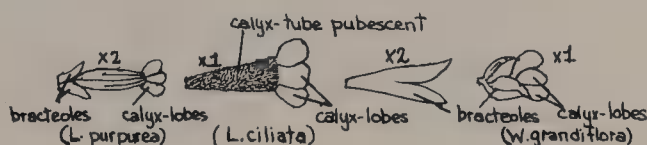
Distribn: Ir (C) (Murchison R. area - Shark Bay).

Flg: Aug-Dec



5 *L. harvestiana*

## C. Calyx-lobes broad, truncate, obtuse.

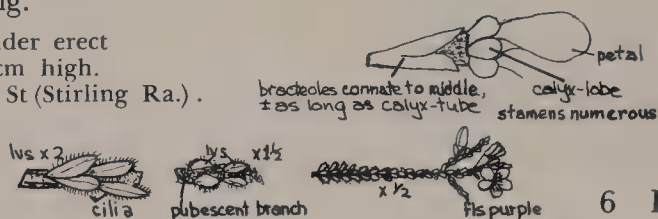


## D. Leaves ciliate, 2-3 mm long.

Habit: Small plant with slender erect  
pubescent branches, 15-20 cm high.

Distribn: Ey (Ravensthorpe), St (Stirling Ra.).

Flg: Nov-Dec

6 ***L. ciliata***

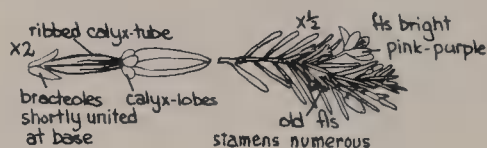
## D. Leaves glabrous 5-10 mm long.

## E. Leaves linear, 7-10 mm long; bracteoles broad, less than half the length of the calyx-tube.

Habit: Glabrous shrub up to 30 cm high.

Distribn: Ir (C) (Geraldton-Kalbarri).

Flg: Sept

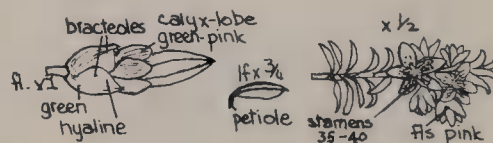
7 ***L. purpurea***

## E. Leaves cuneate-oblong, ± keeled, tips recurved, 5-6 mm long; bracteoles cordate, ± as long as calyx-tube.

Habit: Glabrous shrub 1.5 m high.

Distribn: An-Co (Menzies - Comet Vale).

Flg: Nov-Dec

8 ***W. grandiflora***

## B. Flowers in terminal heads or clusters.

## C. Flowers in terminal heads; axis not growing out.

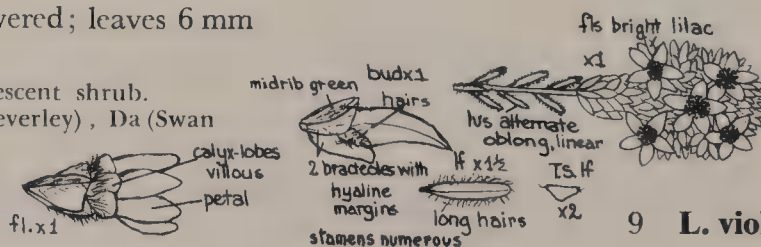
## D. Calyx and bracteoles villous

## E. Heads large, many-flowered; leaves 6 mm long.

Habit: Erect bushy, pubescent shrub.

Distribn: Av (Tammin, Beverley), Da (Swan R.).

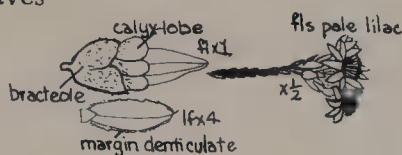
Flg: Aug-Oct

9 ***L. violacea***

- E. Heads small, few-flowered; leaves  
 $\pm$  2 mm long.

Distribn: Co (Coolgardie area)

Flg: Sept



9a ***L. violacea***  
**var. *merrelliana***

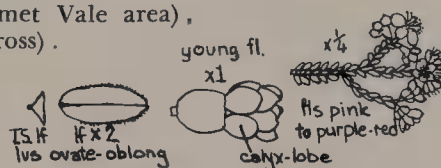
- D. Calyx and bracteoles glabrous.

- E. Leaves keeled, scabrous on edges; petals  
 acute.

Habit: Erect densely-branched shrub  
 50 cm-2 m high.

Distribn: An-Co (Menzies - Comet Vale area),  
 Co (Coolgardie - Southern Cross).

Flg: Sept-Oct



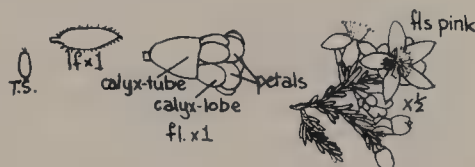
10 ***W. thryptomenoides***

- E. Leaves not keeled, ciliate on margins;  
 petals obtuse.

Habit: Compact upright shrub up to  
 1.3 m high.

Distribn: An (Meekatharra area), Ir (Murchison  
 R.).

Flg: July-Aug



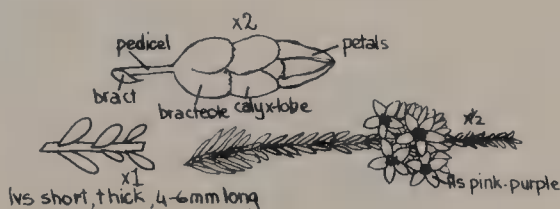
11 ***W. staminosa***

- C. Flowers in clusters; axis growing out;  
 stems often prostrate.

Habit: Shrub 30-45 cm high.

Distribn: An (Mt Churchman), Av, Co (Cool-  
 gardie), Ir.

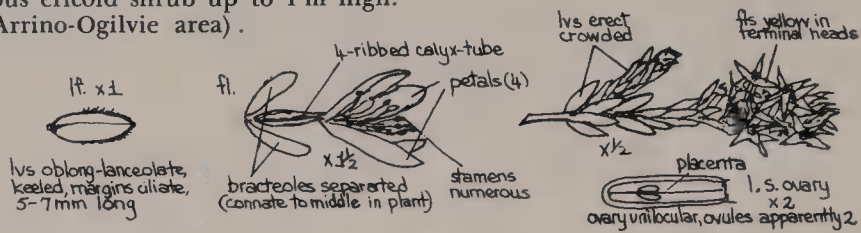
Flg: Sept-Nov



12 ***W. coarctata***

9 Calythropsis

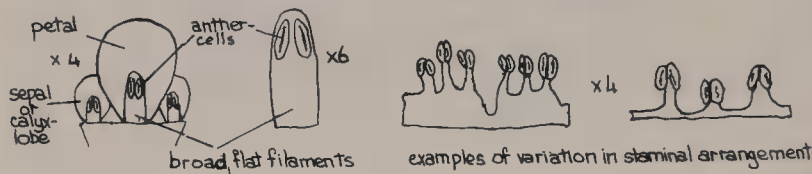
Habit: Glabrous ericoid shrub up to 1 m high.  
Distribn: Ir (Arrino-Ogilvie area).  
Flg: Aug-Nov



C. aurea

10 Astartea, Baeckea, Scholtzia

- A. All anther filaments (or at least those opposite the petals) very flattened and unequal in size; anthers attached to the front of filaments.

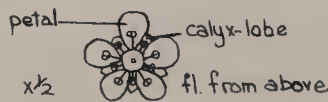


	Page
Section 1	67

- A. All anther filaments slender, terete or only slightly flattened.



- B. Stamens 10 or fewer.



- C. Leaves flat (or folded lengthwise) linear-cuneate, oblong or obovate.



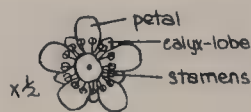
Section 2	70
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- C. Leaves linear- or oblong-club-shaped, or narrow-linear, ± terete or 3-angled.



Section 3	75
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- B. Stamens more than 10.





C. Stamens not united in bundles.

Section 4

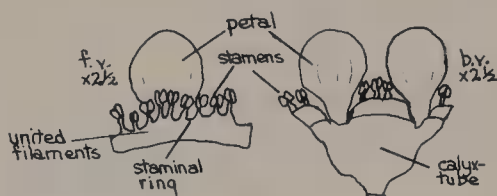
78



C. Stamens united in 5 bundles opposite the calyx-lobes.

Section 5

87

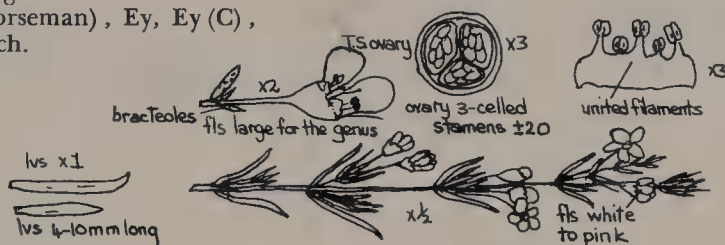
**Section 1**A. Filaments of anthers united to form a more or less complete raised ring.

B. Ovules 6-8 in each cell (loculus) of ovary.

Habit: An erect or spreading shrub up to 1.3 m high.

Distribn: Co (Norseman), Ey, Ey (C), Recherche Arch.

Flg: Sept-Oct

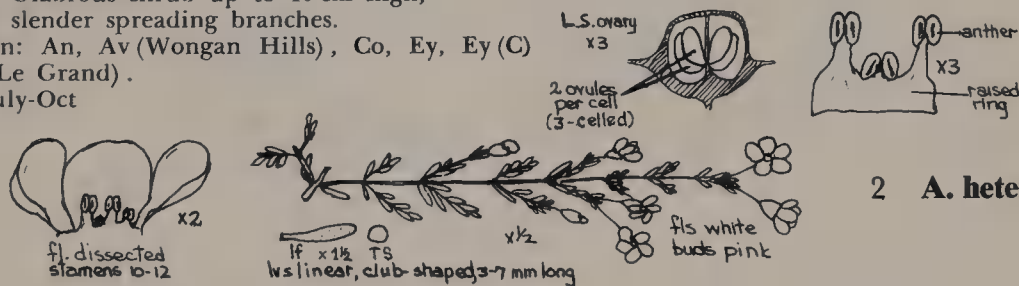
1 **A. ambigua**

B. Ovules 2 (side by side) in each cell of ovary.

Habit: Glabrous shrub up to 40 cm high, with slender spreading branches.

Distribn: An, Av (Wongan Hills), Co, Ey, Ey (C) (C. Le Grand).

Flg: July-Oct

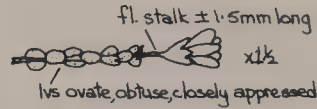
2 **A. heteranthera**A. Filaments of anthers  $\pm$  separate and distinct to base.Note. Filaments all broad and flat, usually quite distinct to base but slightly connate in *B. tenuifolia* and *B. blackettii*.

B. Stamens 10.

(alternate B p. 69)

C. Flower stalks (peduncles, sometimes apparently pedicels) longer than the leaves.

D. Flower stalks under 1 cm long.

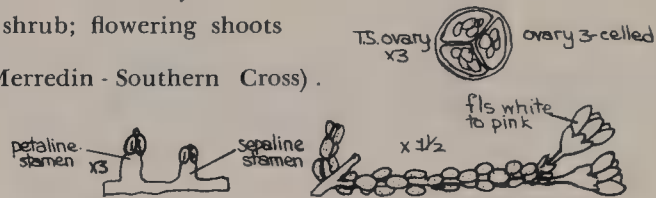


E. Leaves minute (0.5-1 mm long), fleshy; ovules 4-6 in each cell of ovary.

Habit: Low diffuse shrub; flowering shoots candelabra-like.

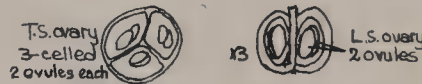
Distribn: Av, Co (Merredin - Southern Cross).

Flg: July-Oct



3 ***B. carnosa***  
Fleshy-leaved  
*Baeckea*

E. Leaves 2-10 mm long; ovules 2 (side by side) in each cell of ovary.

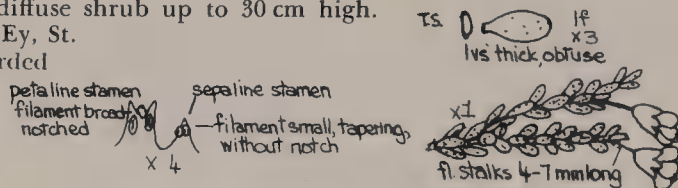


F. Leaves ovate to oblong, 2-3 mm long.

Habit: Low, diffuse shrub up to 30 cm high.

Distribn: Co, Ey, St.

Flg: Not recorded



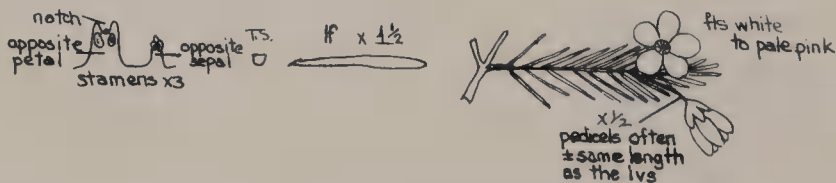
4 ***B. platystemona***

F. Leaves linear 5-10 mm long.

Habit: Small shrub 15-30 cm high.

Distribn: Ey, St (C) (Albany area).

Flg: Aug-Nov



5 ***B. fumana***

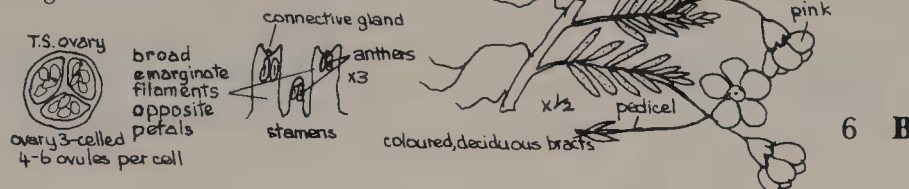
D. Flower-stalks 1-2 cm long.

- E. Leaves linear to oblong-lanceolate,  
± flat.

Habit: Small slender ± prostrate plant.

Distribn: St (Stirling Ra., Ongerup).

Flg: Aug-Nov



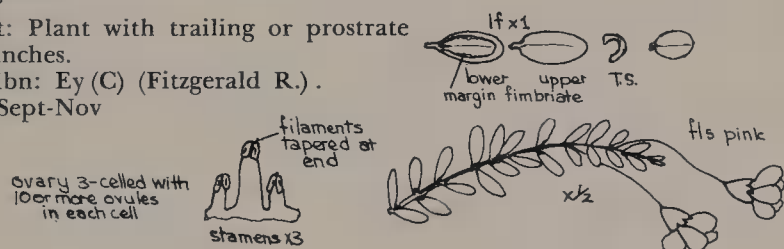
6 *B. schollerifolia*

- E. Leaves oblong to orbicular, thick,  
very convex and with recurved  
margins.

Habit: Plant with trailing or prostrate  
branches.

Distribn: Ey (C) (Fitzgerald R.).

Flg: Sept-Nov



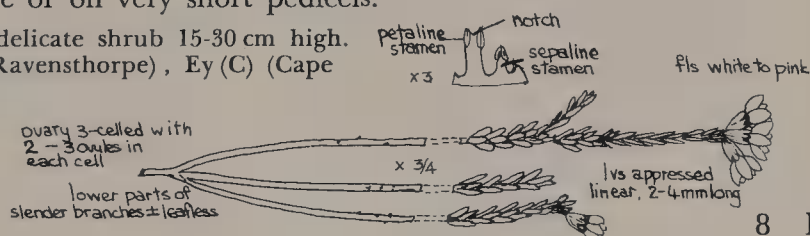
7 *B. oxycoccoides*

- C. Flowers sessile or on very short pedicels.

Habit: Small delicate shrub 15-30 cm high.

Distribn: Ey (Ravensthorpe), Ey (C) (Cape  
Le Grand).

Flg: Aug-Nov



8 *B. dimorphandra*

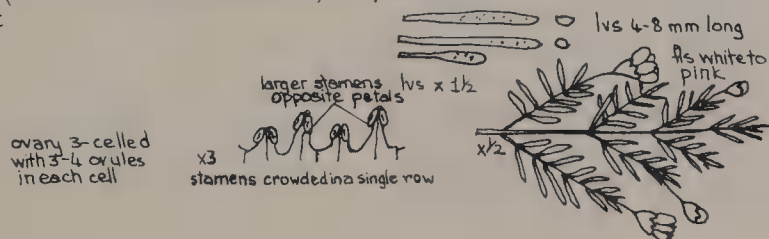
B. Stamens 15-20.

- C. Leaves linear, semi-terete to 3-angled.

Habit: Shrub up to 45 cm high with spreading  
rigid branches.

Distribn: Co (Norseman - Salmon Gums), Ey, St.

Flg: Sept-Oct



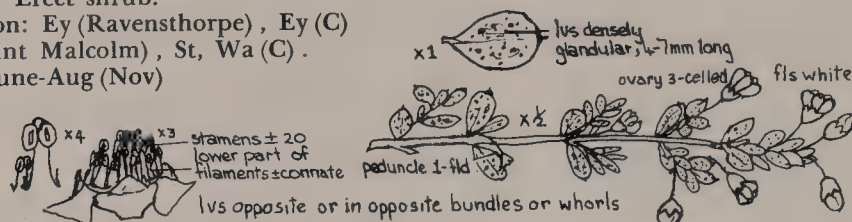
9 *B. tenuifolia*

## C. Leaves flat, thick, orbicular to ovate.

Habit: Erect shrub.

Distribn: Ey (Ravensthorpe), Ey (C)  
(Point Malcolm), St, Wa (C).

Flg: June-Aug (Nov)

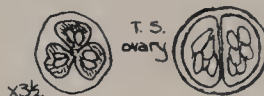
10 **B. blackettii**

## Section 2

## A. Calyx-tube 5-angled or prominently ribbed or pitted or rugose.

(alternate A p. 72)

## B. Calyx-tube 5-angled or prominently ribbed.

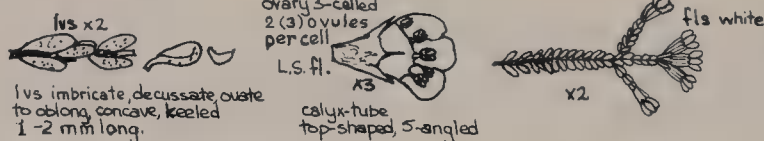
C. Flowers  $\pm$  sessile; ovary 2- or 3-celled.

## D. Stamens 10; anthers opening by slits.

Habit: Dense shrub with many small, erect branches, 30-60 cm high.

Distribn: Ey (C) (E. Mt Barren), St (C) (Cape Riche).

Flg: Sept-Oct

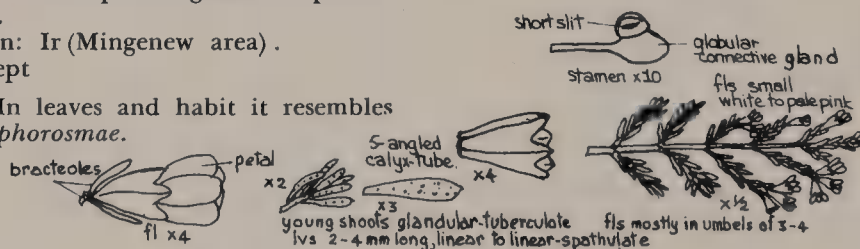
11 **B. tetragona**

## D. Stamens 5; anthers opening by terminal pores or short slits.

Habit: A low-spreading shrub up to 60 cm high.

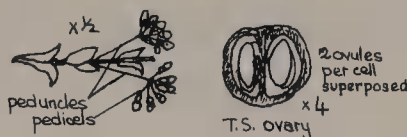
Distribn: Ir (Mingenew area).

Flg: Sept

Note. In leaves and habit it resembles *B. camphorosmae*.12 **B. decipiens**

W. Fitzgerald in describing *B. decipiens* (1904) stated that the ovary was apparently 2-celled with 3-4 ovules per cell. M. Trudgeon who is currently monographing the genus, questions the correctness of this, and it is likely that it may be transferred to a related genus (pers. comm.). In the 1954 Part 1 of Blackall, *B. decipiens* was incorrectly stated to be an ms name designated by C. A. Gardner.

- C. Flowers often on pedicels in cymes or umbels at ends of peduncles which are longer than the leaves; ovary 2-celled.

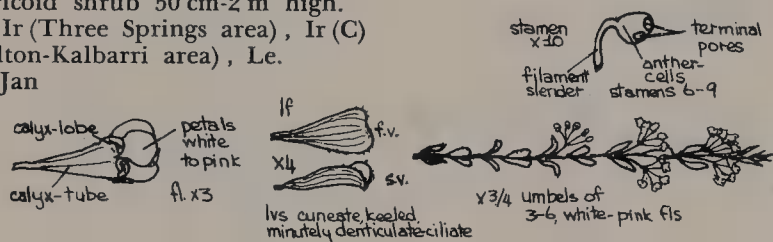


- D. Anther-cells united, opening by terminal pores.

Habit: Ericoid shrub 50 cm-2 m high.

Distribn: Ir (Three Springs area), Ir (C) (Geraldton-Kalbarri area), Le.

Flg: Sept-Jan



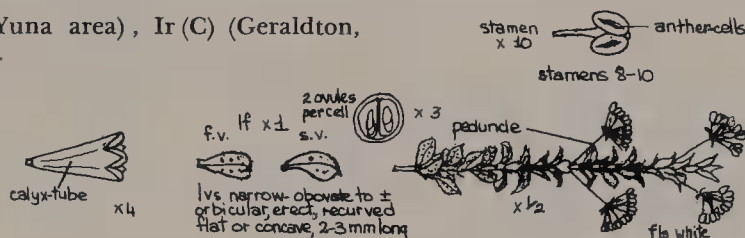
13 *S. umbellifera*

- D. Anther-cells distinct, opening by slits.

Habit: Low bushy shrub with twiggy branches, 1-2 m high.

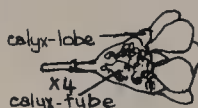
Distribn: Ir (Yuna area), Ir (C) (Geraldton, Shark Bay).

Flg: July-Nov



14 *S. leptantha*

- B. Calyx-tube pitted or rugose.



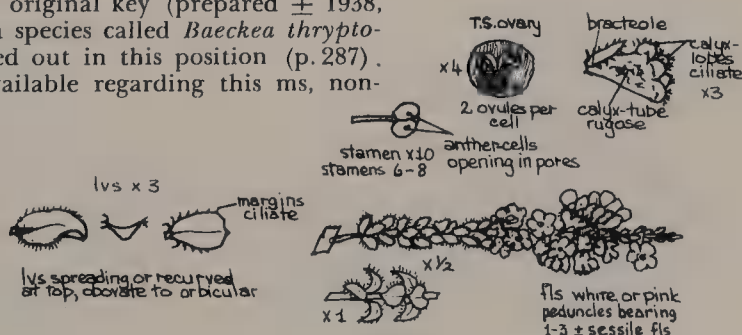
- C. Ovary 3-celled; leaves and calyx-lobes ciliate.

Habit: Spreading, strongly-branched shrub up to 1.5 m high.

Distribn: Da (Moore R.), Ir, Ir (C) (Murchison R.), Le.

Flg: Aug-Oct

Note. In Blackall's original key (prepared  $\pm$  1938, published 1954), a species called *Baeckea thryptomenoides* was keyed out in this position (p. 287). No records are available regarding this ms, non-validated species.



15 *S. ciliata*

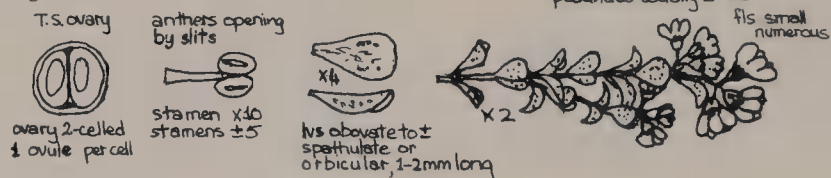
C. Ovary 2-celled; leaves and calyx-lobes not ciliate.

D. Peduncles short, about the same length as the leaves.

Habit: Spreading shrub 1-2.5 m high; densely flowered.

Distribn: An (L. Moore area), Av, Ir, Ir (C) (Murchison R.), Le (Watheroo).

Flg: Aug-Nov



16 ***S. parviflora***

D. Peduncles much longer than the leaves; flowers arranged in heads.

Habit: Twiggy shrub 1-3 m high.

Distribn: Av (Meckering area), Ir, Ir (C) (Kalbarri), Le.

Flg: Aug-Dec



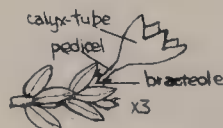
17 ***S. capitata***

A. Calyx-tube smooth (sometimes ± wrinkled or obscurely ribbed).

B. Flowers with peduncles (or pedicels) definitely longer (sometimes much longer) than the leaves.

(alternate B p. 74)

C. Bracteoles persistent; leaves crowded, ± imbricate.



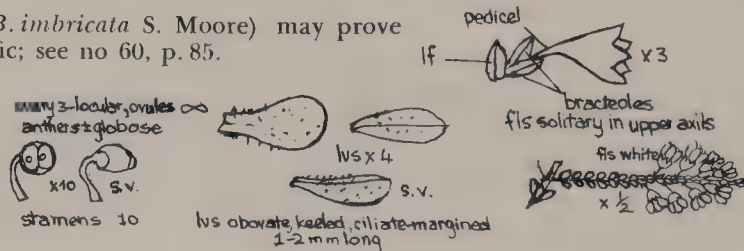
D. Bracteoles at base of pedicels.

Habit: Erect glabrous, bushy shrub 50 cm-1 m high.

Distribn: Co (Nungarin - Southern Cross area).

Flg: Sept

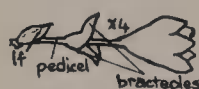
Note. *B. sp.* (*B. imbricata* S. Moore) may prove to be conspecific; see no 60, p. 85.



18 ***B. tenuiramea***



## D. Bracteoles near or above middle of pedicel.

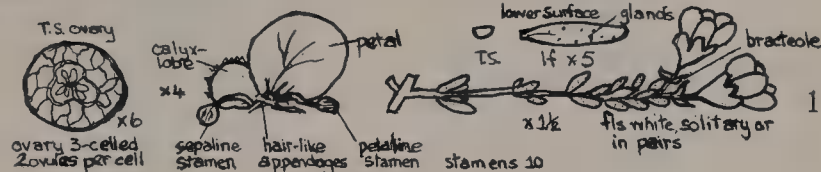


## E. Bracteoles ovate, scarious; hair-like appendages present at base of petaline stamens.

Habit: Shrub 50 cm-1 m high.

Distribn: Av (Cowcowing area), Co (Coolgardie area).

Flg: July-Oct

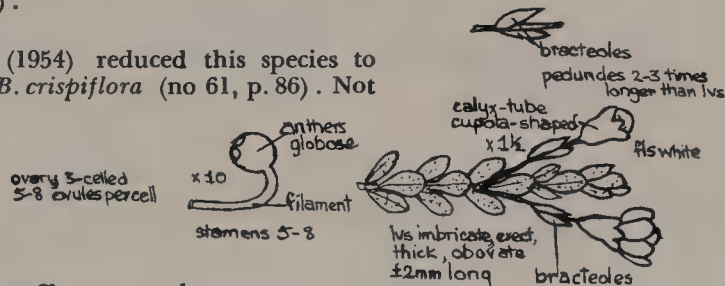
19 ***B. maidenii***

## E. Bracteoles broad-linear or lanceolate; no hair-like appendages at base of petaline stamens.

Habit: Shrub corymbosely branched towards apex, 30-40 cm high.

Distribn: An (Paynes Find area), Ir, Le (Watheroo).

Flg: Nov-Dec

Note. Blackall (1954) reduced this species to be a variety of *B. crispiflora* (no 61, p. 86). Not validated.20 ***B. platycephala***

## C. Bracteoles falling off very early.

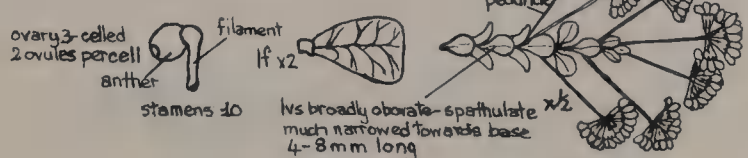
## D. Peduncles (inflorescence stalks) ending in cymes or in a head.

E. Peduncles 1-2 cm long, bearing  $\pm$  sessile flowers.

Habit: Densely-flowered, flat-topped shrub 1-1.3 m high.

Distribn: An (Mt Magnet area), Ir (C) (Dongara-Kalbarri), Le.

Flg: Sept-Nov

21 ***S. spathulata***

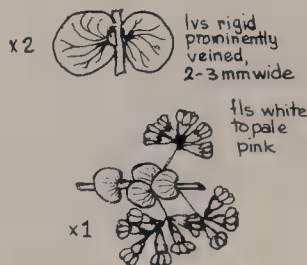
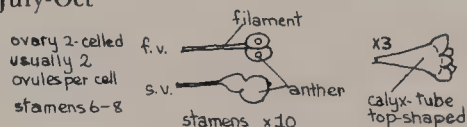
E. Peduncles 0.5-1 cm long.

F. Leaves reflexed, orbicular-cordate.

Habit: Straggling shrub up to 2 m high.

Distribn: Ir, Ir (C) (Northampton-Kalbarri).

Flg: July-Oct



22 ***S. uberiflora***

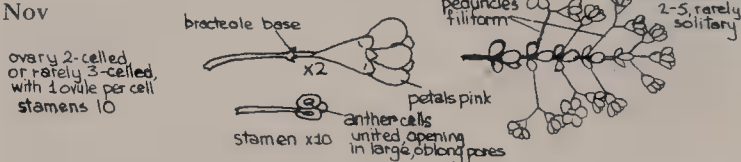
F. Leaves not reflexed.

G. Leaves obovate; flowers in loose umbels.

Habit: Tall shrub with slender twiggy branches, 1-2 m high.

Distribn: An-Ir (Mullewa area), Da (Can-ning R.), Ir, Ir (C), Le.

Flg: Aug-Nov



23 ***S. laxiflora***

G. Leaves  $\pm$  ovate, complicate; flowers in heads.

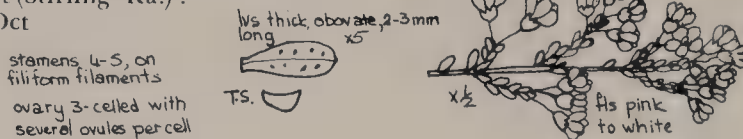
17 ***S. capitata***  
(see p. 72)

D. Peduncles bearing 2-3 flowers together on short pedicels, or longer peduncles only present, each bearing a solitary flower.

Habit: Small ericoid shrub, cushion plant, up to 30 cm high.

Distribn: Av (Pingelly), Ey (Oldfield R.), Ir (C), St (Stirling Ra.).

Flg: Sept-Oct



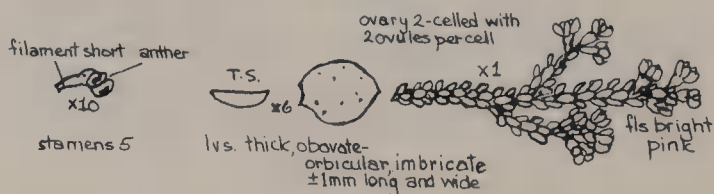
24 ***B. pachyphylla***

B. Flowers solitary or 3 together, on very short peduncles or pedicels.

Habit: Spreading shrub, 50 cm-3 m high.

Distribn: Av (Tammin), Co, Ir, Ir (C) (Murchison R.), Le.

Flg: Aug-Nov



25 ***S. oligandra***  
Pink Scholtzia

## Section 3

A. Flowers very small; petals not above 1 mm in diameter.

B. Stamens 6-10.

C. Leaves 4-6 mm long, mostly in clusters;  
anthers ovate, opening by slits.

Habit: Shrub 50 cm-1 m high, with long branches.

Distribn: Ey (C) (Cape Le Grand), St (C) (Albany area).

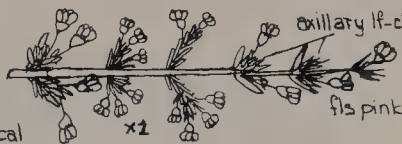
Flg: Sept-Dec

stamens 6-8

ovary 2 or 3-celled  
with  $\pm 8$  ovules per cell

pedicel

calyx-tube  
 $\pm$  hemispherical



lf x  $2\frac{1}{2}$   
lvs linear, semi-terete

anther cells  
long slit  
stamen x 10

26 **B. astarteoides**

C. Leaves 2-3 mm long, scattered; anthers  
globular, opening by pores.

Habit: Slender, erect or spreading plant 10-30 cm high.

Distribn: Ey (C) (Esperance), St (C), Wa (s c) (Denmark).

Flg: Nov-Feb

ovary 3-celled  
with several ovules  
per cell.

bracteoles  
x  $2\frac{1}{2}$   
calyx-lobes short



lf x 1  
lvs linear-terete

anther-cells  
x 12  
pores  
stamens  $\pm 10$

27 **B. pygmaea**

B. Stamens 4-5.

Habit: Small delicate, heath-like plant up to 15 cm high, with filiform, fern-like branches, often growing in peat-swamps.

Distribn: St (C) (Albany area).

Flg: Aug-Nov

T. & lf  
x 2

fls minute



lvs linear-terete

fl x 2  
calyx-tube top-shaped

anther-cells  
opening longitudinally

28 **B. arbuscula**

A. Flowers small, but petals are at least 2 mm in diameter.

B. Flowers in clusters in a long spike-like raceme.

Habit: Plant spreading or erect, 50 cm-1 m high, branches often long, with numerous short branchlets.

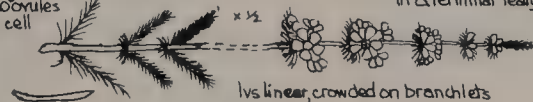
Distribn: Da (Guildford, Bridgetown), St, St (C), Wa (C).

stamens 10

ovary 3-celled  
 $\pm 10$  ovules  
per cell

x 8  
anthers opening by pores

lf x  $1\frac{1}{2}$



bracteoles  
fl. x  $1\frac{1}{2}$

fls white or pink  
in a terminal leafy raceme

lvs linear, crowded on branchlets

29 **B. camphorosmae**  
Camphor Myrtle

B. Flowers solitary or 2-4 together on a common peduncle.

C. Calyx-tube ribbed or obtusely angled.

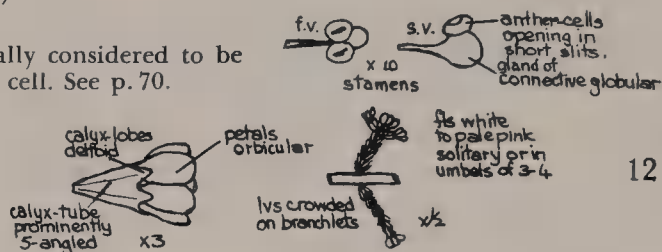
D. Flowers sessile on a  $\pm$  recurved peduncle; stamens 5.

Habit: A low-spreading shrub up to 60 cm high.

Distribn: Ir (Mingenew area).

Flg: Sept

Note. The ovary was originally considered to be 2-celled, with 3-4 ovules per cell. See p. 70.



12 **B. decipiens**  
(see p. 70)

D. Flowers on peduncles and pedicels; stamens 6-10.

E. Calyx-tube ribbed; calyx-lobes each with an appendage at back.

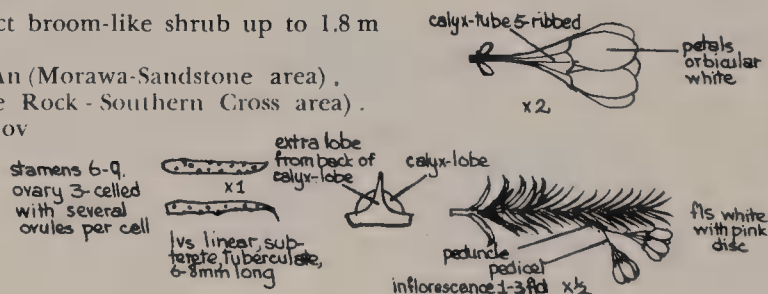
F. Leaves  $\pm$  spreading, mucronate, hooked.

Habit: Erect broom-like shrub up to 1.8 m high.

Distribn: An (Morawa-Sandstone area).

Co (Bruce Rock - Southern Cross area).

Flg: Aug-Nov



30 **B. elderana**

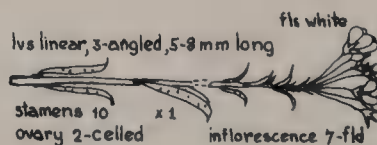
F. Leaves appressed, mucronate, shortly hooked.

Habit: Erect shrub with slender twiggy branches, up to 2 m high.

Distribn: Av-Co (Bruce Rock area).

Flg: Oct

(This may prove to be conspecific with *B. elderana*.)



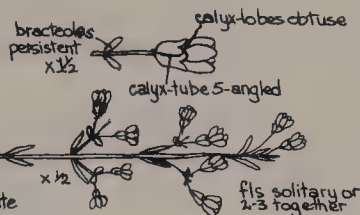
31 **B. baileyana**

## E. Calyx-tube obtusely 5-angled; calyx-lobes without appendages.

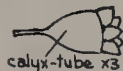
Habit: A small shrub with slender branches.

Distribn: Ey (Ravensthorpe area), Ey (C), St (Toompup).

Flg: Sept-Nov

stamens  $\pm 8$   
ovary 3-celled,  
 $\pm 10$  ovules per celllvs  $\pm$  linear-terete  
4-8 mm long32 **B. latens**

## C. Calyx-tube smooth.



## D. Stamens 6-10.

E. Leaves acute and  $\pm$  hooked.

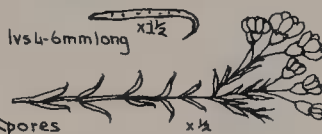
Habit: Shrub with rather slender branches.

Distribn: Co (Norseman), Ey, Ey (C) (Stokes Inlet).

Flg: Sept-Nov

Note. Blackall (1954, p.288) also recognised a variety *gracilis*. Not validated.ovary 3-celled,  
15-20 ovules per cellstamens  $\pm 8$ 

anthers x 10

33 **B. uncinella**

## E. Leaves obtuse.

## F. Stamens 10.

## G. Flowers solitary; anther cells parallel, opening longitudinally.

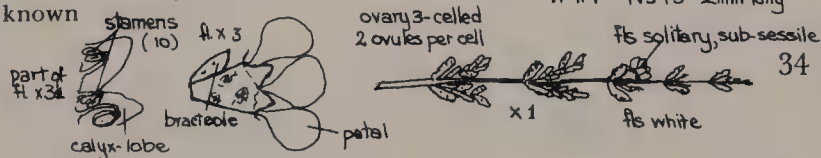


## H. Leaves small, cylindric-club-shaped.

Habit: Glabrous shrub with slender branches.

Distribn: Co (Belka area).

Flg: Not known

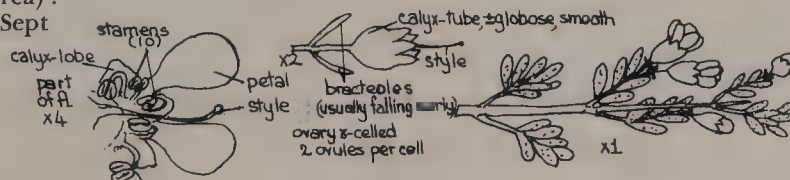
34 **B. clavifolia**

## H. Leaves spreading, obovoid or oblong.

Habit: Low, much-branched, often diffuse shrub up to 50 cm high.

Distribn: Co (Coolgardie area), Ey (Grass Patch area).

Flg: Aug-Sept

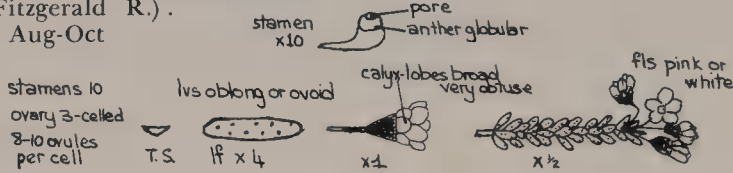
35 **B. crassifolia**  
(for var. *icosandra*  
see p. 81)

G. Peduncles bearing usually 1-5 flowers;  
anthers  $\pm$  globular, opening in  
terminal pores.

Habit: Erect slender shrub 30-60 cm high.

Distribn: An, Av (Cowcowing), Ey, Ey (C)  
(Fitzgerald R.).

Flg: Aug-Oct



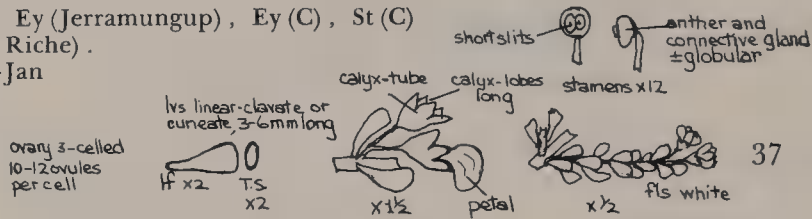
36 **B. floribunda**

F. Stamens 6-8.

Habit: Loosely-branched shrub up to 1 m  
high.

Distribn: Ey (Jerramungup), Ey (C), St (C)  
(Cape Riche).

Flg: Dec-Jan



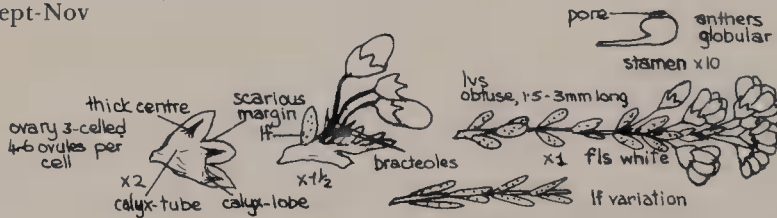
37 **B. corynophylla**

D. Stamens 5 (rarely 6).

Habit: Erect wiry shrub up to 70 cm high.

Distribn: Av, Co, Ey, Ey (C), Le, St, St (C).

Flg: Sept-Nov



38 **B. preissiana**

## Section 4

A. Leaves linear, semi-terete, 3-angled or oblong,  
club-shaped, globose to nearly cylindrical.

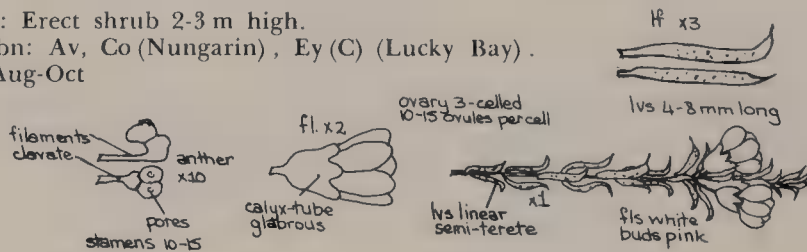
(alternate A p. 83)

B. Leaves with a prominent horizontal or  
recurved point.

Habit: Erect shrub 2-3 m high.

Distribn: Av, Co (Nungarin), Ey (C) (Lucky Bay).

Flg: Aug-Oct



39 **B. behrii**  
Broom Baeckea



## B. Leaves without a prominent point.

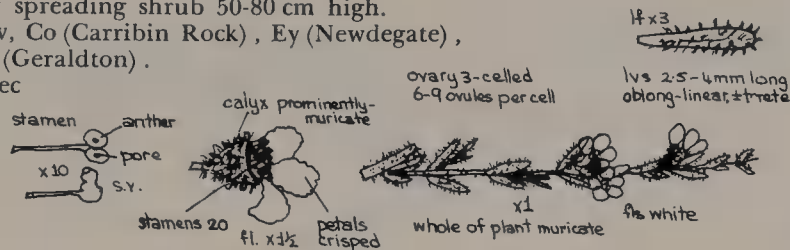
## C. Leaves covered with stout, hair-like semi-transparent processes.

Habit: Low spreading shrub 50-80 cm high.

Distribn: Av, Co (Carribin Rock), Ey (Newdegate),

Ir, Ir (C) (Geraldton).

Flg: Sept-Dec

40 ***B. muricata***

## C. Leaves glabrous (sometimes tuberculate).

## D. Flowers sessile or on pedicels which may be shorter than, equal to, or slightly longer than the leaves.

(alternate D p. 81)

## E. Petals yellow or cream.

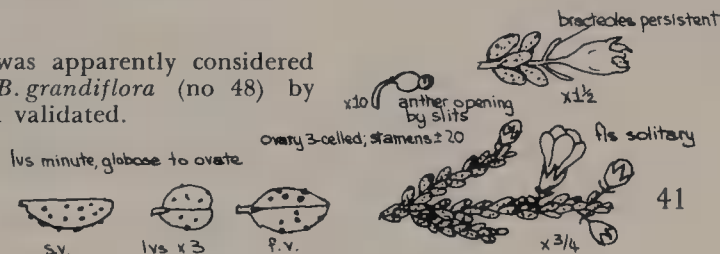
Habit: Erect branching shrub 1-1.3 m high.

Distribn: An (Menzies), Av (Moora),

Co (Ularring), Ir.

Flg: Sept

Note. This species was apparently considered to be a variety of *B. grandiflora* (no 48) by Blackall (1954). Not validated.

41 ***B. ochropetala***

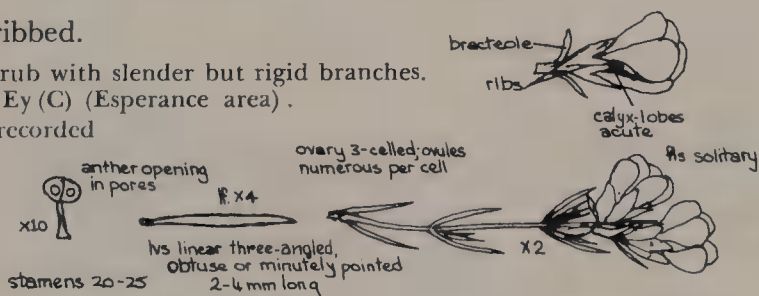
## E. Petals red, pink or white.

## F. Calyx 5-ribbed.

Habit: Shrub with slender but rigid branches.

Distribn: Ey (C) (Esperance area).

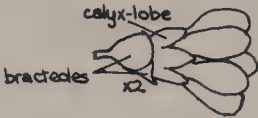
Flg: Not recorded

42 ***B. gracilis***F. Calyx  $\pm$  smooth or finely honeycombed.

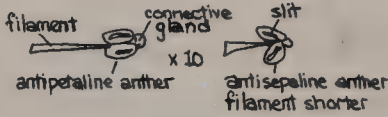
## G. Bracteoles persistent.

(alternate G p. 81)

H. Bracteoles large and more or less enclosing calyx-tube.

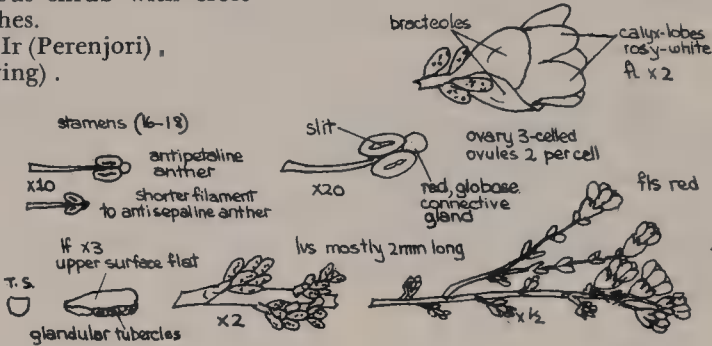


I. Flowers small; petals  $\pm$  3 mm in diameter; anthers opening by slits; leaves  $\pm$  oblong.



J. Stamens 16-20.

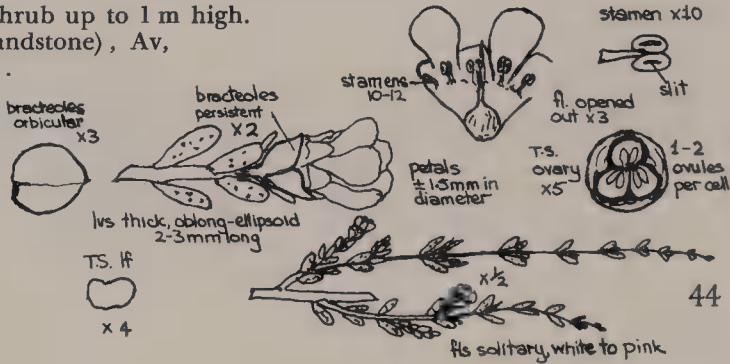
Habit: Glabrous shrub with erect leafy branches.  
Distribn: An-Ir (Perenjori),  
Av (Cowcowing).  
Flg: Oct-Nov



43 **B. stowardii**

J. Stamens 10-12.

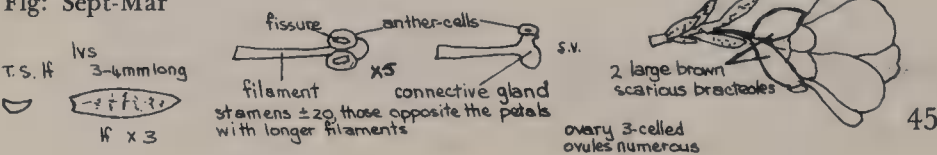
Habit: Diffuse shrub up to 1 m high.  
Distribn: An (Sandstone), Av,  
Co (Merredin).  
Flg: Aug-Sept



44 **B. cryptandroides**

I. Petals  $\pm$  4 mm in diameter (rather larger than in the preceding two species); anther-cells globular opening by pores or broad vertical fissures; leaves broad-linear.

Habit: Shrub up to 40 cm high.  
Distribn: Co (Southern Cross, Hyden),  
St (L. Grace).  
Flg: Sept-Mar



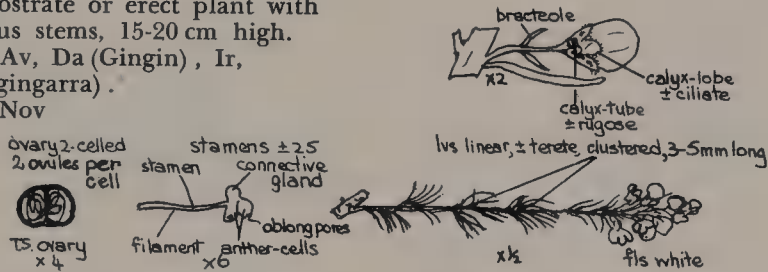
45 **B. grandibracteata**

- H. Bracteoles linear, attached  $\pm$  midway between calyx and base of pedicel.

Habit: Prostrate or erect plant with numerous stems, 15-20 cm high.

Distribn: Av, Da (Gingin), Ir, Le (Badgingarra).

Flg: Sept-Nov



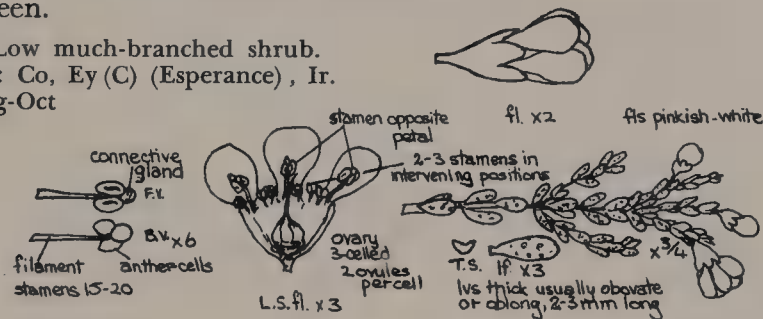
46 ***S. teretifolia***

- G. Bracteoles falling off so early as to be rarely seen.

Habit: Low much-branched shrub.

Distribn: Co, Ey (C) (Esperance), Ir.

Flg: Aug-Oct



47 ***B. crassifolia*  
var. *icosandra***  
(see also p. 77)

- D. Flowers on long pedicels at least twice the length of the leaves.

- E. Flowers relatively large; petals 3-8 mm in diameter.

- F. Calyx-lobes obtuse; calyx-tube very open; bracteoles persistent.

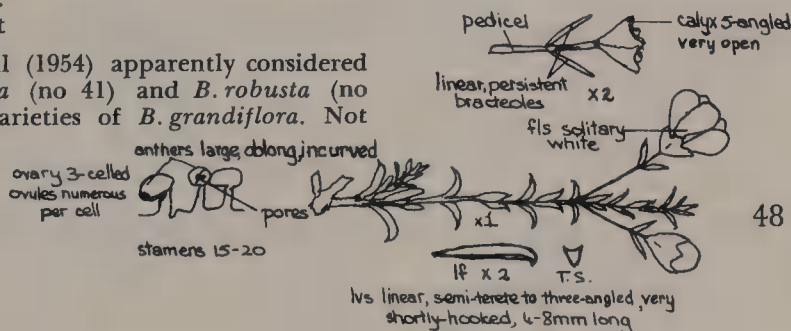
- G. Bracteoles linear, herbaceous.

Habit: Shrub 60 cm-1 m high.

Distribn: An (Pindar), Av, Da (Regans Ford), Ir (Coorow), Ir (C) (Kalbarri), Le, Le (C).

Flg: July-Oct

Note. Blackall (1954) apparently considered *B. ochropetala* (no 41) and *B. robusta* (no 50) to be varieties of *B. grandiflora*. Not validated.



48 ***B. grandiflora***  
Large-flowered  
*Baeckea*

G. Bracteoles broad-ovate, keeled, obtuse, scarious, coloured.

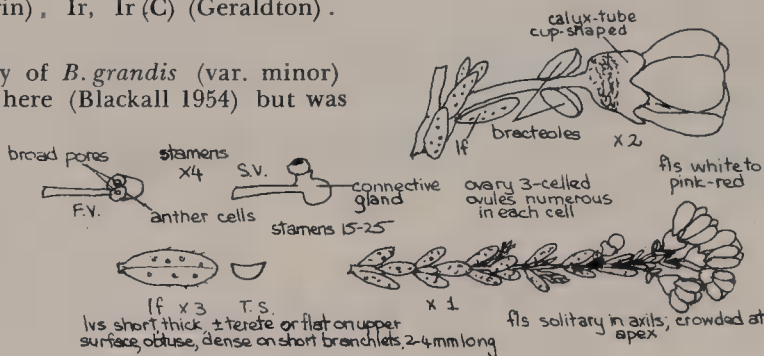
Habit: Robust shrub 40-50 cm high.

Distribn: An (Pindar), Av (Wongan Hills),

Co (Welbungin), Ir, Ir (C) (Geraldton).

Flg: Aug-Oct

Note. A variety of *B. grandis* (var. *minor*) was keyed out here (Blackall 1954) but was not validated.



49 ***B. grandis***

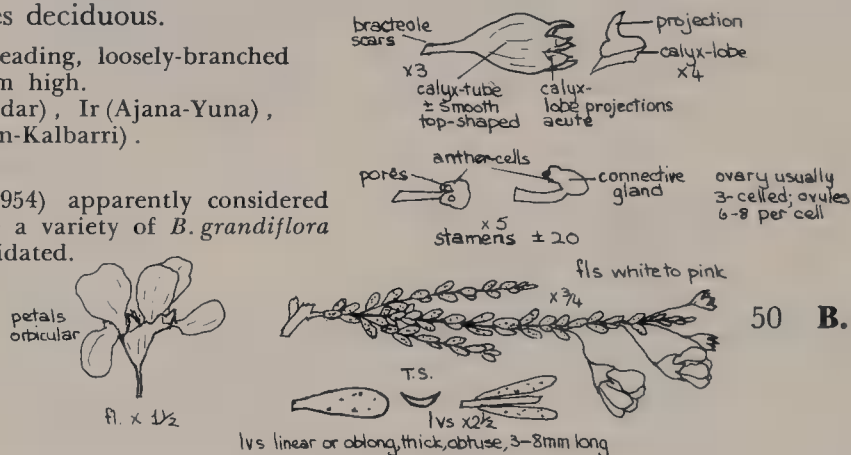
F. Calyx-lobes  $\pm$  deltoid; projections acute; bracteoles deciduous.

Habit: Erect, spreading, loosely-branched shrub up to 2 m high.

Distribn: An (Pindar), Ir (Ajana-Yuna), Ir (C) (Geraldton-Kalbarri).

Flg: Aug-Oct

Note. Blackall (1954) apparently considered this species to be a variety of *B. grandiflora* (no 48). Not validated.



50 ***B. robusta***

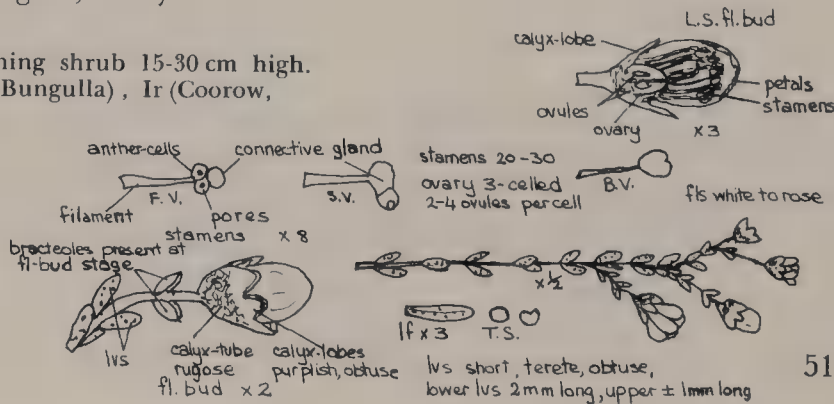
E. Flowers small; petals usually 2-3 mm in diameter.

F. Calyx-tube rugose; ovary  $\pm$  superior.

Habit: Branching shrub 15-30 cm high.

Distribn: Av (Bungulla), Ir (Coorow, Eneabba).

Flg: Aug-Nov



51 ***B. staminosa***

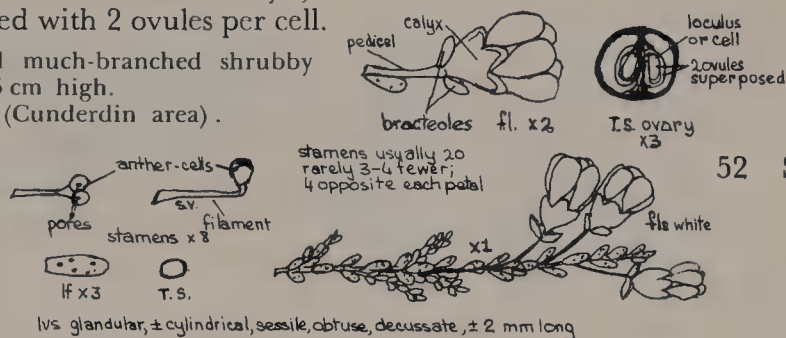
F. Calyx-tube smooth; ovary inferior to semi-superior.

G. Bracteoles attached close to calyx; ovary 2-celled with 2 ovules per cell.

Habit: Small much-branched shrubby plant 10-15 cm high.

Distribn: Av (Cunderdin area).

Flg: Nov



52 *S. eatoniana*

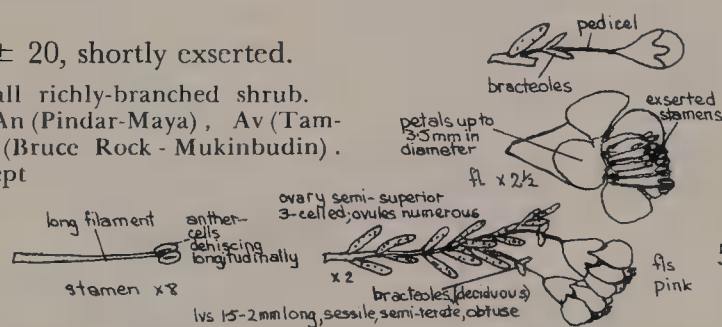
G. Bracteoles attached at or below the middle of the pedicel; ovary 3-celled with several ovules per cell.

H. Stamens  $\pm 20$ , shortly exserted.

Habit: Small richly-branched shrub.

Distribn: An (Pindar-Maya), Av (Tamin), Co (Bruce Rock - Mukinbudin).

Flg: Aug-Sept



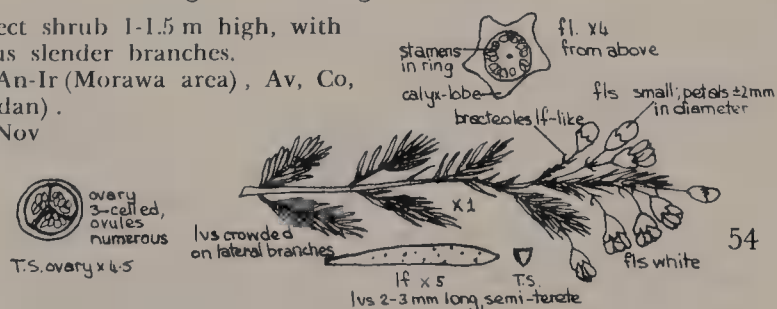
53 *B. exserta*

H. Stamens 25-30 in a single dense ring.

Habit: Erect shrub 1-1.5 m high, with numerous slender branches.

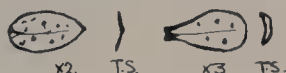
Distribn: An-Ir (Morawa area), Av, Co, Ey (Scaddan).

Flg: Sept-Nov



54 *B. pulchella*

A. Leaves flat or concave.



B. Bracteoles persistent.

(alternate B p. 86)

C. Pedicels and calyx-tubes ribbed or striate.

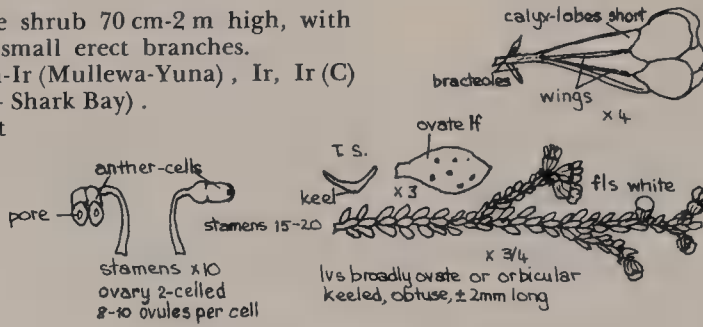


D. Calyx-tube 5-angled or winged; ovary 2-celled.

Habit: Large shrub 70 cm-2 m high, with numerous small erect branches.

Distribn: An-Ir (Mullewa-Yuna), Ir, Ir (C) (Kalbarri - Shark Bay).

Flg: Aug-Oct



55 **B. pentagonantha**

D. Calyx-tube 5-striate or with numerous longitudinal wrinkles.



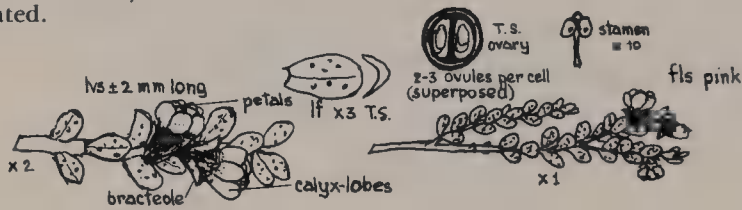
E. Ovary 2-celled; stamens 20-25.

Habit: Erect bushy glabrous shrub 30-60 cm high.

Distribn: An (Mt Magnet area).

Flg: Sept

Note. The new combination *Baeckea decussata* was foreshadowed by C. A. Gardner but was not validated.



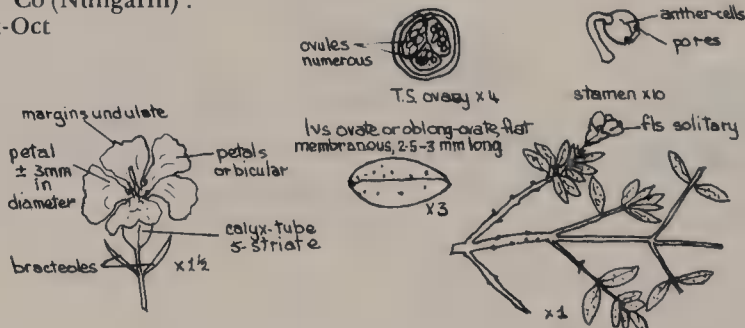
56 **S. decussata**

E. Ovary 3-celled; stamens 15.

Habit: Glabrous much-branched shrub.

Distribn: Co (Nungarin).

Flg: Sept-Oct



57 **B. thymoides**

C. Pedicels and calyx-tubes smooth.

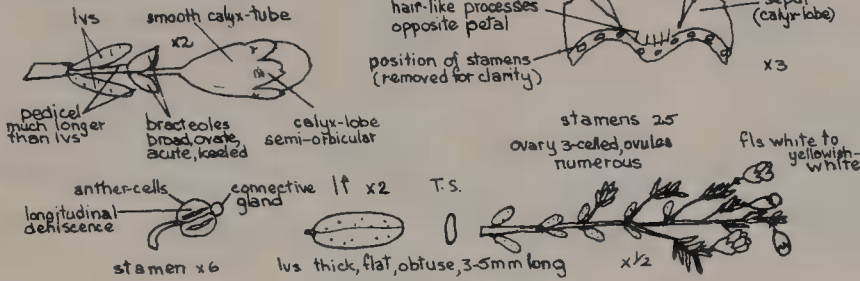


D. Hair-like processes (setae) present behind petaline anthers (in front of petals).

Habit: Erect glabrous shrub up to 1 m high.

Distribn: An (Mt Magnet-Sandstone area),  
Co (Merredin-Karalee area).

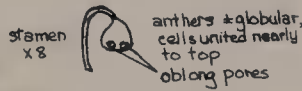
Flg: Sept-Nov



58 ***B. leptospermoides***

D. No hair-like processes present behind anthers.

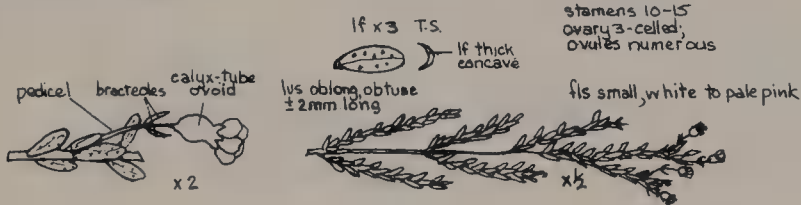
E. Anthers opening by pores.



F. Petals  $\pm 1$  mm in diameter.

Habit: Small shrub with many slender branches, 30-60 cm high.

Distribn: Av, Co (Bonnie Rock - Hyden),  
Ir (Three Springs), St.



59 ***B. leptophylla***

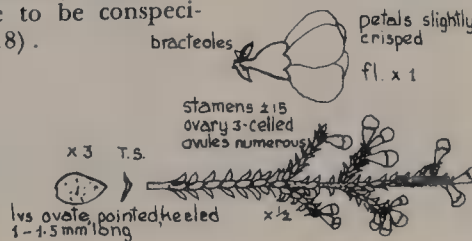
F. Petals  $\pm 3$  mm in diameter.

Habit: Glabrous shrub.

Distribn: Co (Kununoppin).

Flg: Not recorded.

Note. The name (*B. imbricata*) given to this species by S. Le Moore (1920-22) is illegitimate. [Ref. *B. imbricata* (Gaertn.) Druce, N.S.W., 1917]. It may prove to be conspecific with *B. tenuiramea* (no 18).



60 ***B. sp.***



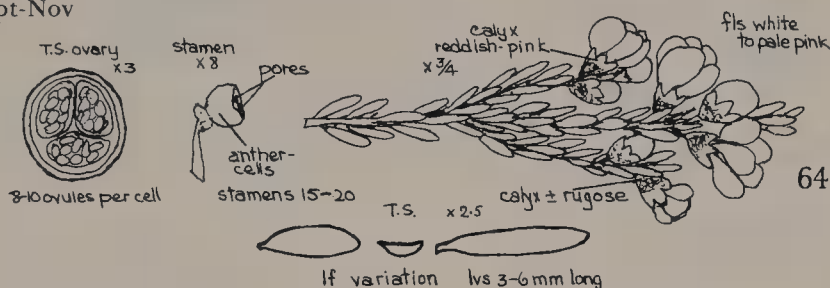
D. Flowers solitary on pedicels 4-6 mm long;  
ovary 3-celled.

E. Petals relatively large (5-6 mm in diameter); leaves variable in shape, linear-oblong, broad-linear or ovate.

Habit: Erect shrub up to 1 m high.

Distribn: Ey (C) (Mts Barren).

Flg: Sept-Nov



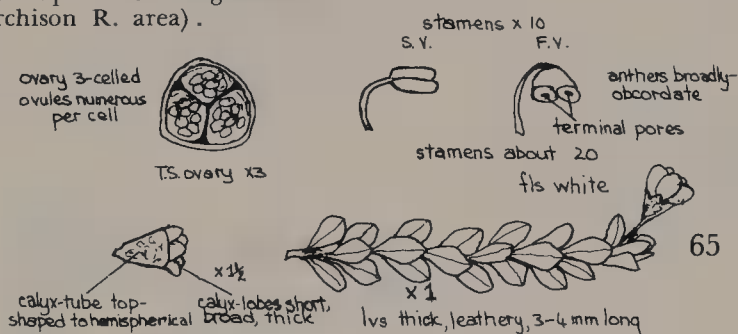
64 **B. ovalifolia**

E. Petals smaller ( $\pm 3$  mm in diameter);  
leaves obovate-cuneate.

Habit: Erect shrub up to 1.5 m high.

Distribn: Ir (Murchison R. area).

Flg: Sept-Nov



65 **B. subcuneata**

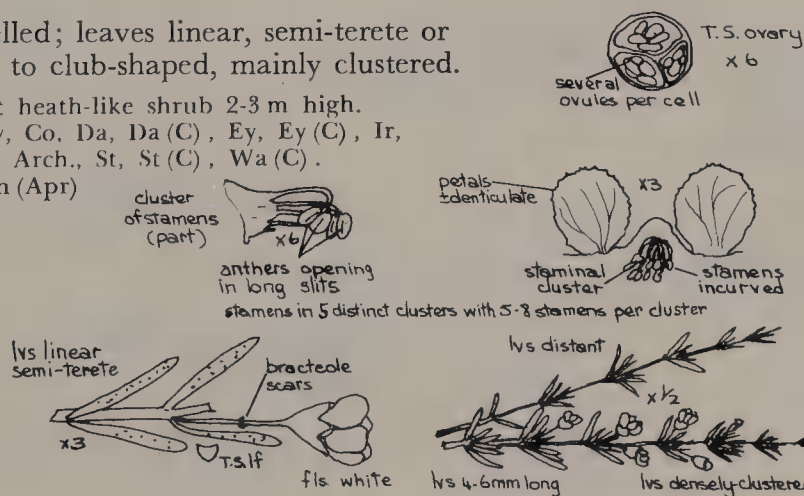
## Section 5

A. Ovary 3-celled; leaves linear, semi-terete or triquetrous to club-shaped, mainly clustered.

Habit: Erect heath-like shrub 2-3 m high.

Distribn: Av, Co, Da, Da (C), Ey, Ey (C), Ir, Recherche Arch., St, St (C), Wa (C).

Flg: Nov-Jan (Apr)



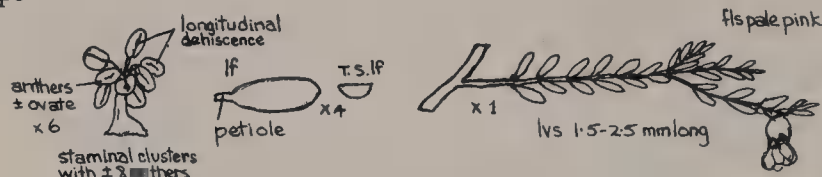
66 **A. fascicularis**

A. Ovary 2-celled; leaves short and broadly club-shaped, never clustered.

Habit: Glabrous many-stemmed shrub up to 1 m high.

Distribn: An-Ir (Maya area).

Flg: Sept



67 **A. clavifolia**

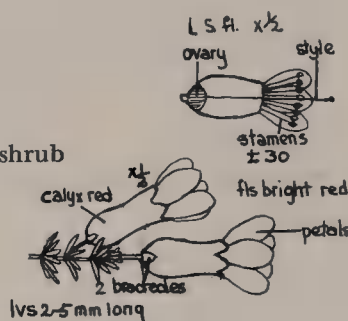
## 11 Balaustion

A. Prostrate or diffuse plant; calyx-tube glabrous,  $\pm 1.5$  cm long.

Habit: Small prostrate or slightly ascending shrub forming a clump  $\pm 1$  m in diameter.

Distribn: An-Ir (Perenjori), Av, Co (Hyden).

Flg: Sept-Nov



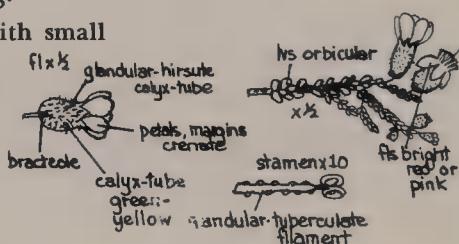
1 **B. pulcherrimum**  
Native  
Pomegranate

A. Small erect shrub; calyx-tube glandular-hirsute,  $\pm 0.5$  cm long.

Habit: Erect shrub 15-60 cm high, with small crowded leaves 1-2 mm long.

Distribn: An (Pindar-Morawa area).

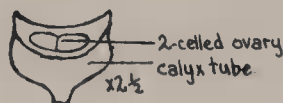
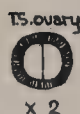
Flg: Aug-Oct



2 **B. microphyllum**  
Bush  
Pomegranate

## 12 Hypocalymma

A. Ovary 2-celled.



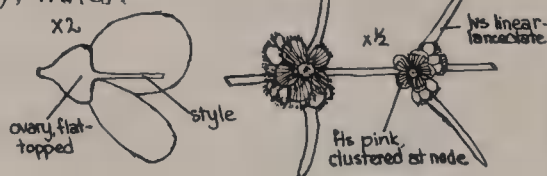
(alternate A p. 89)

B. Leaves linear-lanceolate, 1-2.5 cm long.

Habit: Shrub up to 1 m high, with opposite leaves and clustered scented flowers.

Distribn: Av (Northam), Da-Da (C) (Swan Plain, Darling Ra.), St (Williams), St (C), Wa (C).

Flg: July-Sept (Jan)

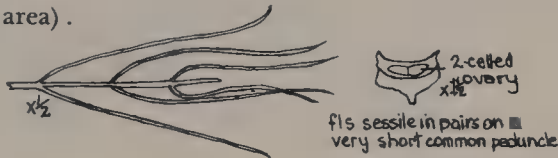


1 **H. robustum**  
Swan River  
Myrtle

B. Leaves linear-3-angled or linear-terete.

C. Leaves 4-6 cm long.

Habit: A small glabrous, erect shrub with twiggy branches.  
Distribn: Ir (Murchison R. area).  
Flg: Not recorded

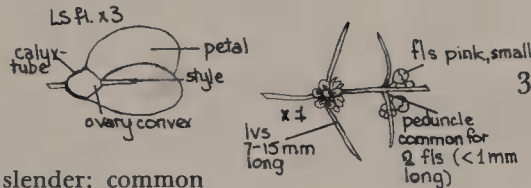


2 ***H. longifolium***

C. Leaves less than 3 cm long.

D. Flowers clustered.

Habit: Bushy glabrous shrub 30-60 cm high.  
Distribn: Ey (C) (E. Mt Barren), St (Stirling Ra), St (C) (Albany), Wa (s c) (Denmark).  
Flg: Dec-Mar



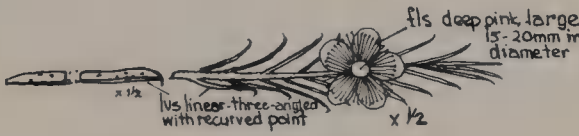
3 ***H. strictum***

Branches and leaves more slender; common peduncles 2-3 mm long.  
Distribn: Ey (C), St (C).  
Flg: Oct-Nov

3a ***H. strictum***  
**var. *pedunculatum***

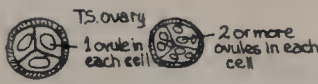
D. Flowers solitary (petals up to 8 mm in diameter).

Habit: Slender erect shrub 1-1.75 m high.  
Distribn: Av (Kellerberrin, Wongan Hills), Ey (L. King), Le (C) (Cockleshell Gully), St (L. Grace).  
Flg: Nov-Apr

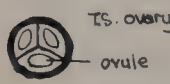


4 ***H. puniceum***  
**Large Myrtle**

A. Ovary 3-celled.



B. One ovule in each cell.



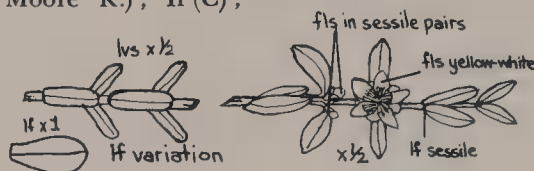
C. Leaves broad- to narrow-oblong, oblong-cuneate or elliptical.

- D. Leaves broadly-oblong to oblong-cuneate, obtuse.

Habit: Slender shrub with  $\pm$  4-angled branches, up to 1 m high.

Distribn: Da (C) (north of Moore R.), Ir (C), Le (Dandaragan), Le (C).

Flg: Aug-Sept



5 ***H. tetrapterum***

- D. Leaves narrow-oblong, or elliptical.

Habit: Glabrous shrub 30-60 cm high.

Distribn: Av (Moora), Da (north of Moore R.)

Ir (Three Springs), Le (Mt Lesueur), St.

Flg: Aug-Sept



6 ***H. linifolium***

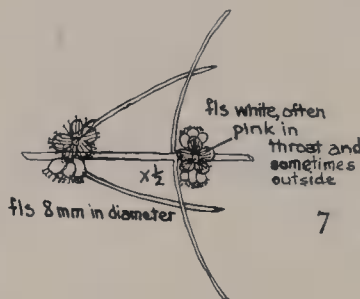
- C. Leaves linear, semi-terete or 3-angled.

- D. Leaves 1-3 cm long, 3-4 times as long as the small flowers.

Habit: Erect, many-stemmed glabrous shrub 30 cm-1 m high.

Distribn: Av (Dowerin), Da (Darlington, Bridgetown), Ir (Northampton), Le, St, Wa (Busselton).

Flg: June-Oct



7 ***H. angustifolium***  
White Myrtle

Plant with shorter leaves, denser almost spicate inflorescences and smaller flowers.

Distribn: St (C) (Albany area).

7a ***H. angustifolium***  
var. ***densiflorum***

- D. Leaves 4-8 mm long, not exceeding the large flowers.

Habit: Glabrous plant with erect twiggy branches.

Distribn: Da (Capel), Wa (C) (Busselton, Augusta).

Flg: Sept-Oct



8 ***H. ericifolium***

- B. Two or more ovules in each cell.



- C. Flowers white or pink-purple.

- D. Two or three ovules in each cell of ovary.

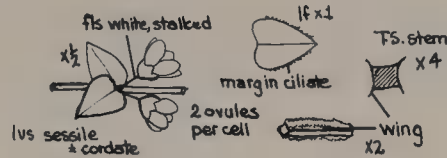


E. Leaves  $\pm$  acute; branchlets winged.

Habit: Spreading shrub up to 1 m high.

Distribn: Da (Pinjarra, Collie), St, St (C),  
Wa (C).

Flg: Aug-Dec

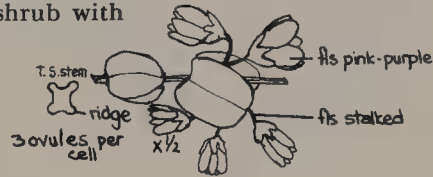
9 *H. cordifolium*

## E. Leaves very obtuse, branchlets tetragonal, not winged.

Habit: Slender spreading or tufted shrub with angular stems, up to 30 cm high.

Distribn: St (Stirling Ra.).

Flg: Sept-Oct

10 *H. speciosum*

## D. Ovules 6-12 in each cell of ovary.

## E. Branches pubescent.

Habit: Shrub up to 80 cm high, with softly pubescent branches.

Distribn: St (Stirling Ra.), St (C) (Albany).

Flg: Sept-Dec

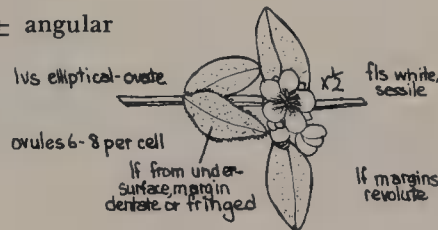
11 *H. phillipsii*

## E. Branches glabrous.

Habit: Shrub 1-2 m high, with  $\pm$  angular glabrous branches.

Distribn: St (Stirling Ra.).

Flg: Aug-Oct

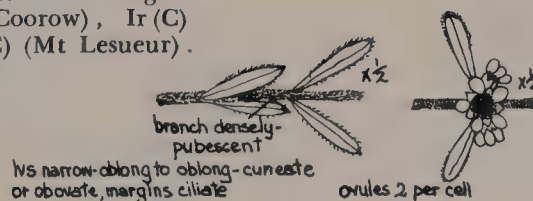
12 *H. myrtifolium*

## C. Flowers yellow; branches densely pubescent.

Habit: Small tufted shrub 20 cm-1 m high.

Distribn: Da (Gingin), Ir (Coorow), Ir (C) (Murchison R.), Le, Le (C) (Mt Lesueur).

Flg: July-Oct

13 *H. xanthopetalum*

13 *Agonis*A. Stamens 10.(alternate A p. 93)

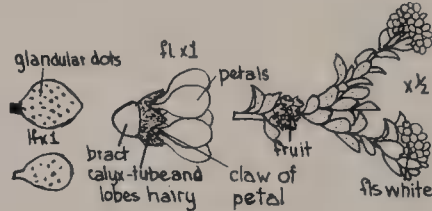
## B. Leaves obovate to elliptical.

C. Leaves without main veins,  
rarely above 5 mm long.

Habit: Shrub up to 80 cm high.  
 Distribn: Ey, Ey (C) (Bremer Bay-  
 Israelite Bay), St (Stirling Ra.),  
 St (C).

Flg: Aug-Nov

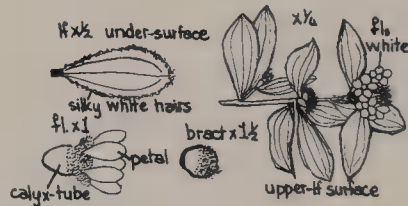
Leaves longer, narrower and less obtuse;  
 flowers larger; petal-claws shorter.

1 ***A. spathulata***1a ***A. spathulata***  
var. ***angustifolia***C. Leaves with well-marked veins  
1-2.5 cm long.D. Leaves 3-veined, margins ciliate;  
bracts not longer than calyx-tube.

Habit: Shrub 1-3 m high; branches and  
 young shoots hairy.

Distribn: Ey (C) (Esperance), Recherche  
 Arch., St (C), Wa (C) (Walpole).

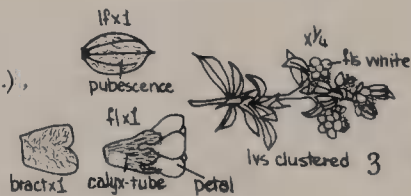
Flg: July-Jan

2 ***A. marginata***D. Leaves 1-3-veined with pointed tips;  
bracts longer than calyx-tube.

Habit: Shrub up to 2 m high, with flexuose  
 branches.

Distribn: Ey (C) (E. Mt Barren), St (Stirling Ra.),  
 St (C), Wa (Northcliffe).

Flg: Sept-Nov

3 ***A. floribunda***

## B. Leaves linear to linear-lanceolate.

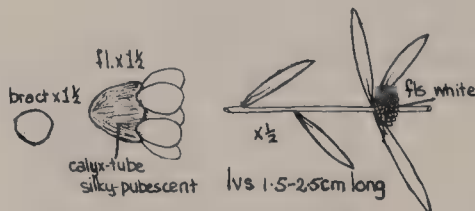
## C. Bracts and calyx-lobes obtuse.

## D. Leaves longer than 1 cm.

Habit: Shrub 1-3 m high.  
 Distribn: Av, Da, Da (C), Ey,  
 Ey (C), St, St (C), Wa,  
 Wa (C).

Flg: Aug-Dec

Flower-heads large, leaves 3-nerved.  
 Distribn: Stirling Ra.

4 ***A. linearifolia***4a ***A. linearifolia***  
var. ***conspicua***

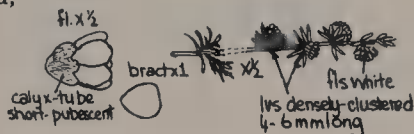
## D. Leaves shorter than 7 mm.

Habit: Much-branched shrub up to 2 m high.

Distribn: St (Stirling Ra.), St (C), Wa,

Wa (C).

Flg: Sept-Dec

5 ***A. parviceps***

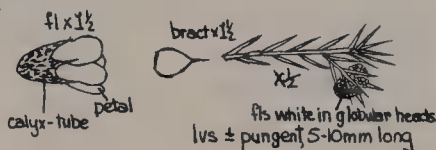
## C. Bracts and calyx-lobes acute.

Habit: Tall shrub (to 3 m), or small tree.

Distribn: St (Williams, Porongurup Ra.), St (C),

Wa (Warren R.), Wa (C) (Walpole).

Flg: Aug-Nov (Jan-Mar)

6 ***A. juniperina***  
White Cedar  
or WattieA. Stamens 20-30.

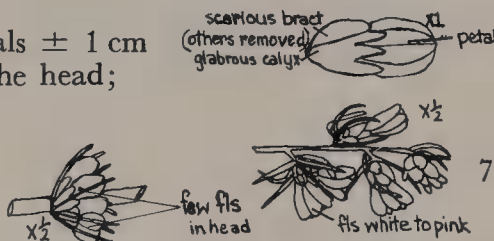
## B. Leaves ± 1 cm long.

## C. Leaves linear; flowers large (petals ± 1 cm in diameter), solitary or 2-4 in the head; bracts and calyx-lobes scarious.

Habit: Erect densely-branched shrub up to 1.5 m high.

Distribn: Da (Lesmurdie-Pinjarra).

Flg: Oct-Nov

7 ***A. grandiflora***

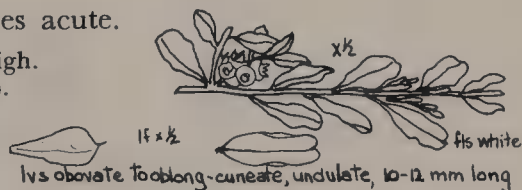
## C. Leaves ovate or obovate.

## D. Bracts acuminate; calyx-lobes acute.

Habit: Erect shrub up to 1 m high.

Distribn: St (Stirling Ra.), St (C).

Flg: Sept-Nov

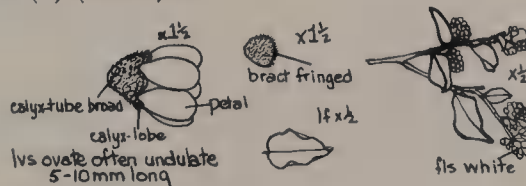
8 ***A. undulata***

## D. Bracts and calyx-lobes obtuse.

Habit: Slender erect shrub up to 2 m high.

Distribn: St (Stirling Ra.), St (C) (Albany-Mt Manypeak).

Flg: Oct-Dec

9 ***A. hypericifolia***

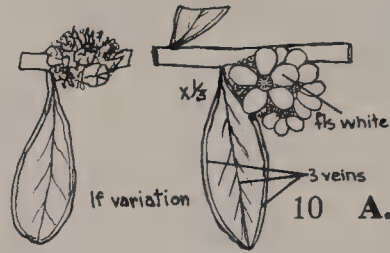
B. Leaves 3-18 cm long.

C. Flowers large (petals  $\pm 6$  mm in diameter);  
leaves  $\pm 5$  cm long, prominently 3-veined.

Habit: Dense shrub up to 1.5 m high.

Distribn: Ey, Ey (C) (Mts Barren-Israelite Bay).

Flg: Sept-Nov



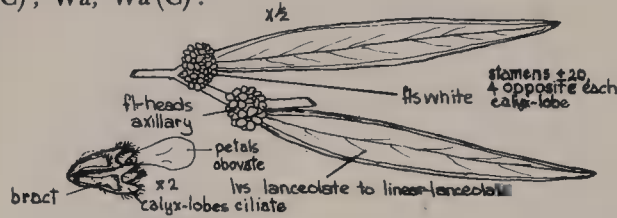
10 **A. obtusissima**

C. Flowers small (petals  $\pm 2$  mm in diameter);  
leaves up to 18 cm long.

Habit: Robust tree up to 15 m high.

Distribn: Da (Swan R., Yarloop), Da (C), Ey (C)  
(Bremer Bay), St (C), Wa, Wa (C).

Flg: Aug-Dec



11 **A. flexuosa**  
Peppermint  
or Willow Myrtle

Branches stouter and more rigid; leaves shorter  
broader and obtuse; flowers larger.

11a **A. flexuosa**  
var. **latifolia**

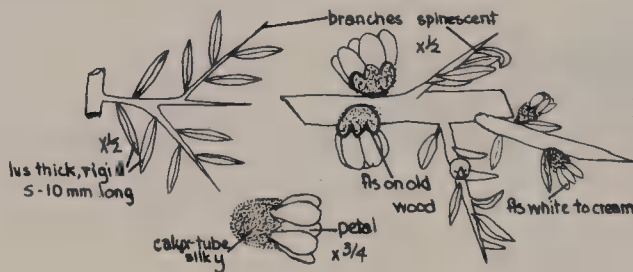
## 14 Leptospermum

### A. Branches spinescent.

Habit: A rigid shrub up to 1 m high.

Distribn: Ey, Ey (C) (Esperance), Le, Le (C), St  
(Stirling Ra.), St (C).

Flg: Oct-Nov



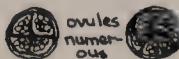
1 **L. spinescens**

### A. Branches not spinescent.

### B. Calyx glabrous.

Note. The calyx may be minutely hairy when young  
or the lobes may be ciliate (as in *L. oligandrum*).

### C. Ovary 4-5-celled.

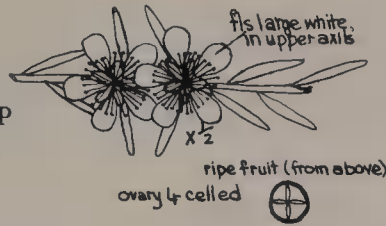


- D. Flowers closely sessile; leaves linear-lanceolate 1-3 cm long.

Habit: Small tree, 3-4 m high.

Distribn: Da (C) (Bayswater), St (Porongurup Ra.), St (C), Wa, Wa (C).

Flg: Oct-Dec



2 ***L. firmum***

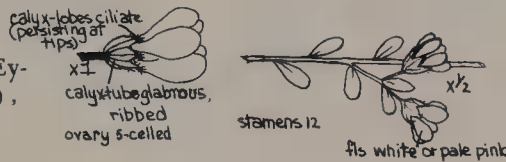
- D. Flowers pedicellate.

- E. Calyx ribbed; leaves obovate, 5-10 mm long.

Habit: Shrub 1.5 m high.

Distribn: An-Ir (Mullewa area), Ey-  
Ey (C) (Ravensthorpe-Esperance),  
Ir (C), St (Mt Barker).

Flg: Oct-Dec



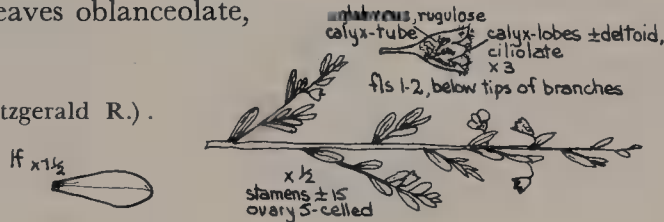
3 ***L. oligandrum***

- E. Calyx rugulose; leaves oblanceolate, 4-7 mm long.

Habit: Shrub.

Distribn: Ey (C) (Fitzgerald R.).

Flg: Sept-Nov



4 ***L. maxwellii***

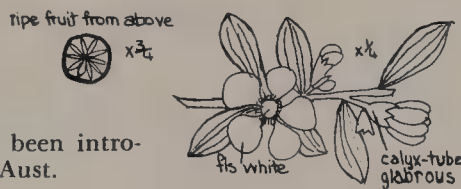
- C. Ovary 10-celled.

Habit: Tall shrub or small tree.

Distribn: Da, Da (C), St (C).

Flg: Sept-Oct

Note. This species may prove to have been introduced into W. Aust. from Vict. or S. Aust.



5 ***L. laevigatum***  
Coast Teatree

- B. Calyx pubescent or hirsute.

- C. Branchlets dichotomous and flexuose.

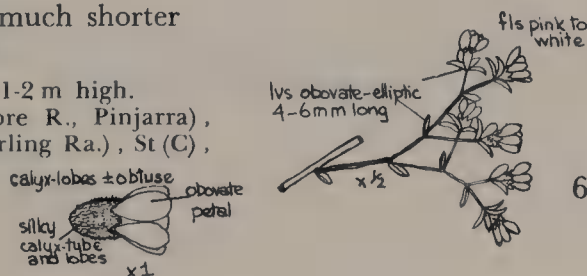
- D. Tall erect shrubs; flowers small; petals obovate.

- E. Calyx shortly silky, lobes much shorter than tube; stamens  $\pm 15$ .

Habit: Erect glabrous shrub 1-2 m high.

Distribn: Da (Guildford, Moore R., Pinjarra),  
Da (C), Ey (L. King), St (Stirling Ra.), St (C),  
Wa (C).

Flg: Sept-Dec



6 ***L. ellipticum***  
Swamp Teatree

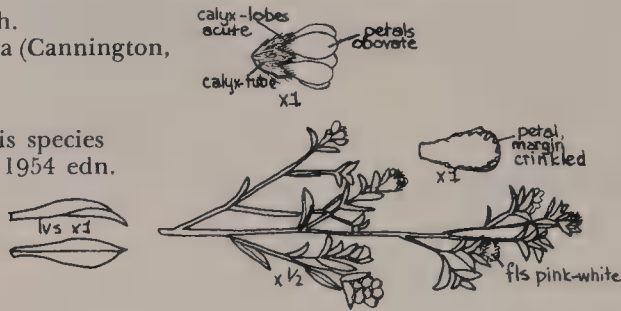
- E. Calyx with long hairs; lobes  $\pm$  as long as calyx-tube; stamens numerous.

Habit: Plant 30-90 cm high.

Distribn: Av (Northam), Da (Cannington, Guildford).

Flg: Sept-Oct

Note. Blackall regarded this species as a var. of *ellipticum*. See 1954 edn. Not validated.



7 ***L. floridum***

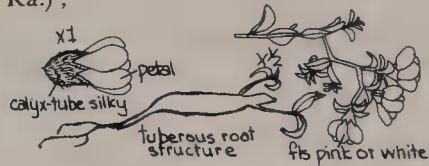
- D. Dwarf rigid, flat-topped shrub; flowers large; petals 4 mm in diameter.

Habit: Shrub up to 1 m high; stem thickened at base.

Distribn: Da (Jandakot), St (Porongurup Ra.), St (C), Wa (s c) (Denmark).

Flg: Dec-Feb

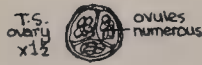
Note: This species may prove to be conspecific with *L. ellipticum*.



8 ***L. crassipes***

- C. Branches usually slender and straight, not dichotomous.

- D. Ovary 3-celled.

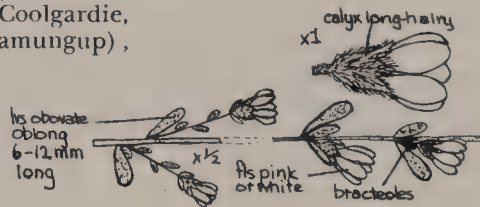


- E. Calyx densely villous with long, spreading hairs.

Habit: Straggly shrub 50 cm-2 m high.

Distribn: An, Av (Tammin), Co (Coolgardie, Kumarl, Widgiemooltha), Ey (Jerramungup), Ey (C) (Esperance), St (Kukerin).

Flg: Sept-Nov



9 ***L. roei***

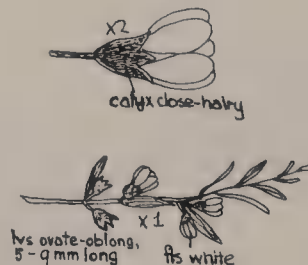
- E. Calyx with closely-appressed silky hairs.

Habit: Erect shrub up to 1 m high.

Distribn: Co (Coolgardie: sandplain area).

Flg: Sept-Nov

Note. Flowers smaller than in preceding species; bracteoles falling very early. Listed as conspecific with *L. roei* (Gardner 1930).



10 ***L. fastigiatum***



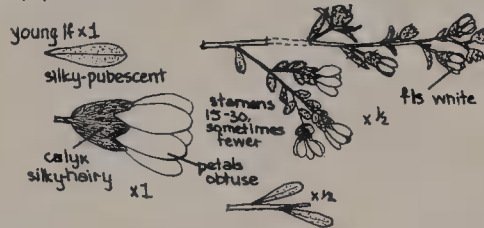
- D. Ovary 4-5-celled; calyx with closely-appressed silky hairs.

- E. Leaves elliptical, oblong or somewhat obovate.

Habit: Spreading much-branched shrub up to 2 m high.

Distribn: Av (York, Kellerberrin), Co (Bruce Rock), Da (Swan R., Bridgetown), Ey-Ey (C) (Ravensthorpe-Esperance), Ir (C), St (Kojonup).

Flg: Aug-Nov



11 ***L. erubescens***

Branches straighter; leaves longer.

Distribn: Ey (C) (Esperance).

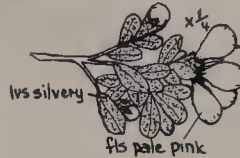
11a ***L. erubescens***  
var. ***stricta***

- E. Leaves markedly obovate; flowers very large (2-5 cm in diameter).

Habit: Spreading shrub 1-2 m high, silky-pubescent.

Distribn: Ey (C) (Cape Le Grand), Recherche Arch.

Flg: Aug-Oct, Jan-Feb



12 ***L. sericeum***  
Silver Teatree

Note. Following the collection of this species in flower and its matching with the type, this species has been restored to the flora of W. Aust. (see Gardner 1964). See also note p. 101 under *Kunzea pulchella*.

## 15 *Kunzea*

- A. Flowers small, petals  $\pm$  2 mm in diameter.

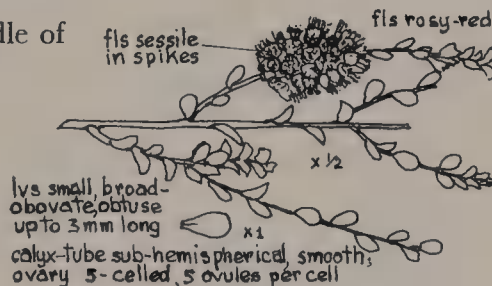
(alternate A p. 100)

- B. Flowers in short spikes on middle of branchlets.

Habit: Shrub.

Distribn: Ey (C) (W. Mt Barren, Fitzgerald R).

Flg: Sept-Dec



1 ***K. spicata***

- B. Flowers in terminal heads.

- C. Flowers numerous, more than 10 per head.

## D. Ovary 2-3-celled.

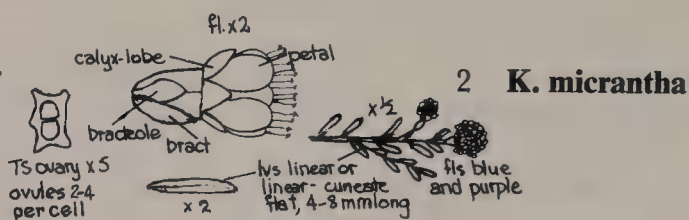
Habit: Shrub 2.5 m high.

Distribn: Da (Cannington, Dwellingup),

Ey (C) (Bremer Bay), Ir (Mingenew),

St (Mt Barker), Wa (C).

Flg: Sept-Dec

2 ***K. micrantha***

## D. Ovary 5-celled.



## E. Flowers yellow.

## F. Leaves linear.

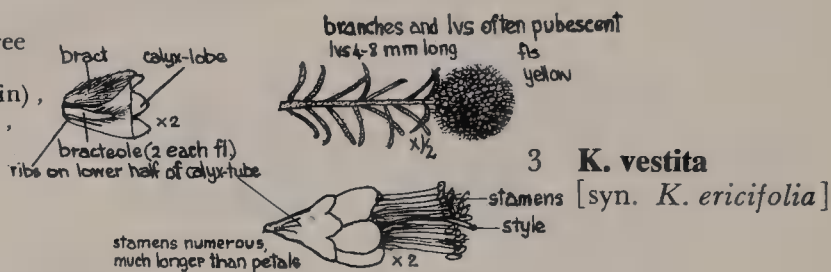
Habit: Tall shrub or small tree  
up to 4 m high.

Distribn: Da (Wanneroo, Gingin),

Ey (C) (W. Mt Barren), St (C),

Wa (C).

Flg: Aug-Dec

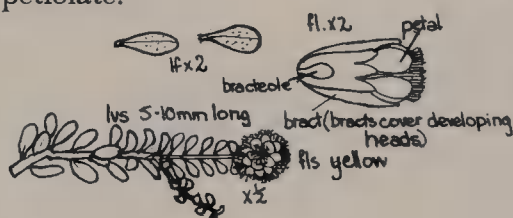
3 ***K. vestita***  
[syn. *K. ericifolia*]

## F. Leaves spatulate-obovate, petiolate.

Habit: Erect shrub 1-2 m high.

Distribn: St (Stirling Ra.).

Flg: Oct-Dec

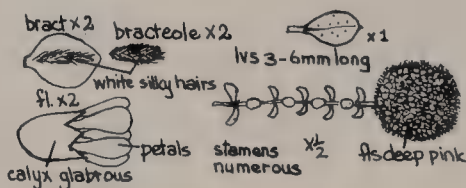
4 ***K. montana***  
Mountain  
Kunzea

## E. Flowers pink or lilac.

F. Leaves spreading or recurved,  
broadly-obovate.Habit: Tall shrub with rigid  
branches, up to 2 m high.

Distribn: Da (Darling Ra.).

Flg: Sept-Oct

5 ***K. recurva***Leaves smaller, nearly orbicular, sessile;  
flowers smaller, deeper-coloured.  
Distribn: St (C), Wa (C).5a ***K. recurva***  
var. *melaleucoides*Leaves narrower, obovate to linear-cuneate;  
more glabrous plant.  
Distribn: Wa (n c, Vasse R.).5b ***K. recurva***  
var. *praestans*

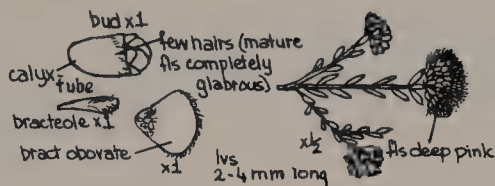
## F. Leaves erect.

## G. Calyx-tube glabrous in mature flower.

Habit: Shrub up to 70 cm high.

Distribn: Da (Bridgetown), Ey (Ravensthorpe), Ey (C) (Hopetoun, Stokes Inlet), St (Kojonup, Ongerup), Wa (Manjimup area).

Flg: Sept-Oct

6 *K. micromera*

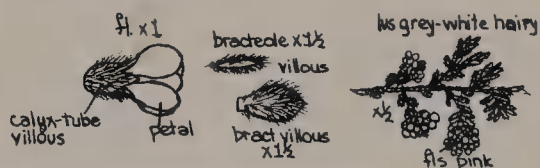
## G. Calyx-tube villous.

Habit Softly hairy shrub up to 1 m high.

Distribn: Ey (C), St (Stirling Ra.).

Flg: Nov

Note. Originally described by Schauer. Reduced to a variety of *K. preissiana* (no 10) by Bentham (1866) and restored to species status by Domin 1921/2, who also made a new variety *glabrior* (more densely-flowered head; not villous).

7 *K. villiceps*

## C. Flowers few, 2-8 in small terminal heads.

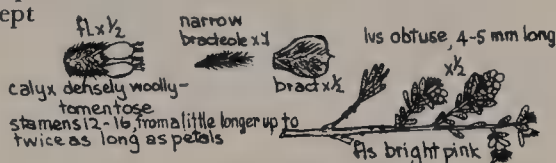


## D. Ovary 2-celled.

Habit: Small heath-like plant up to 70 cm high, glabrous except for the inflorescence.

Distribn: Ey (Ravensthorpe), Ey (C) (Middle Mt Barren).

Flg: Sept-Oct

8 *K. ericalyx*

## D. Ovary 5-celled.

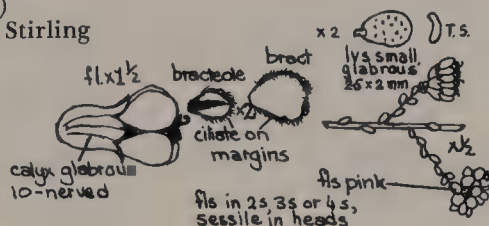
## E. Leaves obovate-elliptical to sub-orbicular.

Habit: Widely-branching shrub 1.5-2 m high.

Distribn: Ey (Ravensthorpe), Ey (C)

(W. Mt Barren), St (Mongerup, Stirling Ra.).

Flg: Aug-Oct

9 *K. jucunda*

E. Leaves linear, linear-lanceolate or oblanceolate.

F. Calyx-tube densely silky-hairy.

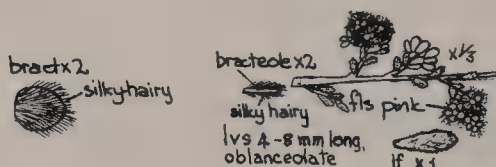
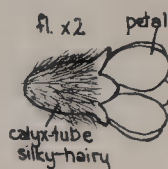
Habit: Much-branched, rather rigid shrub 30 cm-1.3 m high.

Distribn: Ey (Ravensthorpe), Ey (C) (Fitzgerald R.),

St (Narrogin, L. Grace).

Flg: Sept-Oct

Note. A variety of *K. preissiana* was keyed out and illustrated by Blackall (1954) as *glabra*: characterized by linear leaves and glabrous calyx-tube. Not validated.



10 ***K. preissiana***

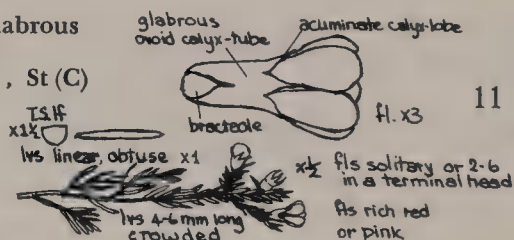
F. Calyx-tube  $\pm$  glabrous.

G. Calyx-lobes and bracteoles long-acuminate.

Habit: Bushy shrub with erect glabrous branches, 60 cm-1 m high.

Distribn: Ey (C) (W. Mt Barren), St (C) (Cape Riche).

Flg: Oct-Nov



11 ***K. pauciflora***

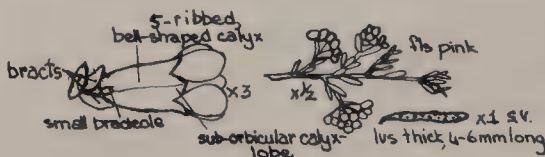
G. Calyx-lobes and bracteoles obtuse.

Habit: Many-stemmed shrub up to 1 m high.

Distribn: Ey (Jerramungup, Grass Patch), Ey (C) (Fitzgerald R., Israelite Bay),

St (C) (Cape Riche).

Flg: Sept-Oct



12 ***K. affinis***

A. Flowers large, petals 4-8 mm in diameter; stamens 1-2.5 cm long; flowers in short racemes or dense spikes.

B. Flowers pedicellate; petals exceeding calyx-lobes.

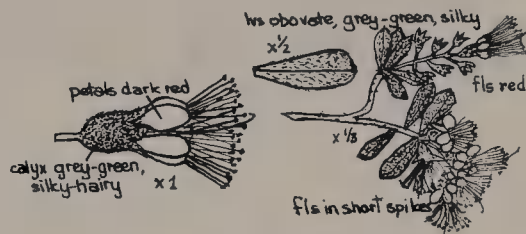
Habit: Shrub 2-3 m high, growing only in crevices on granite outcrops.

Distribn: An (Paynes Find), Av (Kellerberrin),

Co (Bonnie Rock, Bullabulling).

Flg: Sept-Oct

Note. The new combination *K. pulchella* (Lindl.) A. S. George (syn. *Salisia pulchella* Lindl.) replaces *Kunzea sericea* (Labill.) Turcz. for which the basionym was *Leptospermum sericeum* Labill. See also note on p. 97.



13 ***K. pulchella***  
Granite  
Kunzea

Flowers white. Distribn: Co (Gnarlbine).

Flg: Sept

13a ***K. pulchella***  
var. *albiflora*

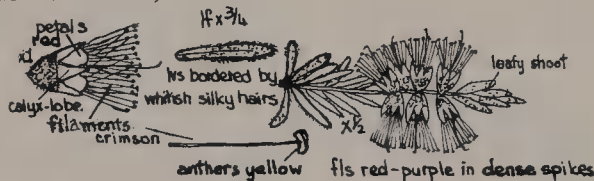
B. Flowers sessile; petals not exceeding calyx-lobes.

Habit: Spreading shrub 1-2 m high, growing on granite outcrops.

Distribn: Ey (C) (Esperance-Israelite Bay), Recherche Arch.

Flg: Sept-Nov

Note. Commonly grown in the Perth area, where it flowers earlier.



14 ***K. baxteri***  
Baxter's  
Kunzea

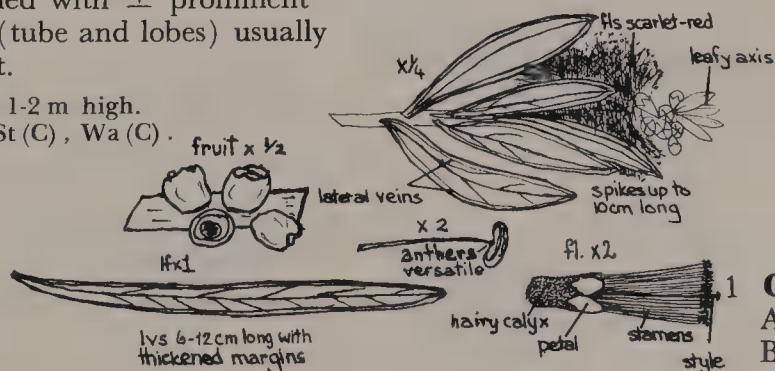
## 16 Callistemon

A. Leaves thick-margined with  $\pm$  prominent lateral veins; calyx (tube and lobes) usually hirsute or pubescent.

Habit: Bush or shrub 1-2 m high.

Distribn: Da (Collie), St (C), Wa (C).

Flg: Sept-Dec

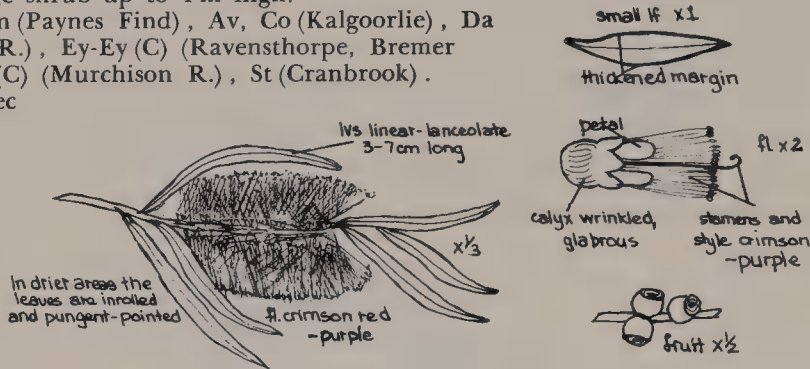


1 ***C. speciosus***  
Albany  
Bottlebrush



A. Leaves thick-margined without lateral veins;  
calyx-tube glabrous and wrinkled.

Habit: Large shrub up to 4 m high.  
Distribn: An (Paynes Find), Av, Co (Kalgoorlie), Da  
(Helena R.), Ey-Ey (C) (Ravensthorpe, Bremer  
Bay), Ir (C) (Murchison R.), St (Cranbrook).  
Flg: Aug-Dec



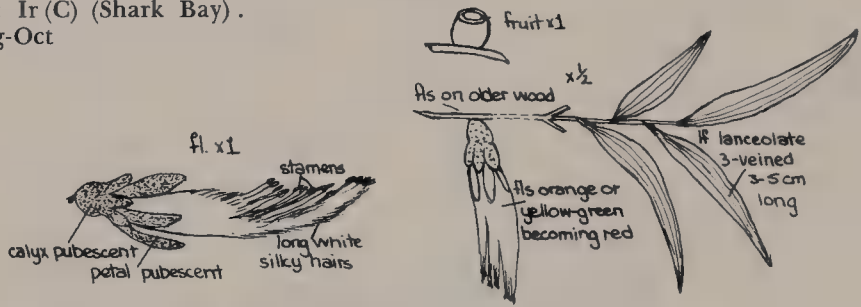
2 ***C. phoeniceus***  
Lesser  
Bottlebrush

17 *Lamarchea*

(See A. S. George 1972)

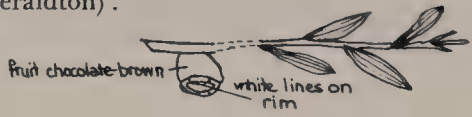
A. Leaves flat, lanceolate.

Habit: Tall shrub or small tree up to 5 m high.  
Distribn: Ir (C) (Shark Bay).  
Flg: Aug-Oct



1 ***L. hakeifolia***

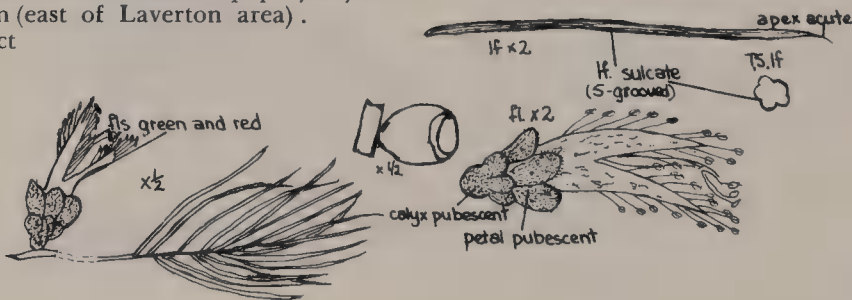
Leaves shorter (1-2 cm long).  
Distribn: Ir ( $\pm$  160 km north of Geraldton).  
Flg: Nov-Jan



1a ***L. hakeifolia***  
var. *brevifolia*

A. Leaves terete, sulcate.

Habit: Spreading shrub to 2 m high, with many  
stems; bark on old stems in papery layers.  
Distribn: An (east of Laverton area).  
Flg: Sept-Oct



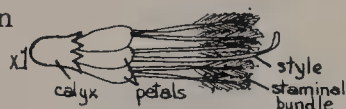
2 ***L. sulcata***



18 *Melaleuca*

(PAPERBARKS, BOTTLEBRUSHES, HONEY-MYRTLES)

- A. Staminal bundles 1-2 cm in length; flowers in dense oblong or cylindrical spikes (except *M. megacephala*).

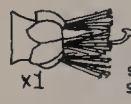


Page  
Section 1

- A. Staminal bundles under 1 cm long.



staminal claws  
exceeding petals



staminal claws  
shorter than petals

- B. Leaves opposite.

- C. Flowers in terminal  $\pm$  globular, ovoid-oblong heads or 1-3 together.



Section 2 107

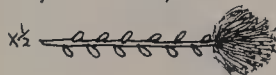
- C. Flowers in clusters or pairs on the old wood or in spikes not terminal.



Section 3 110

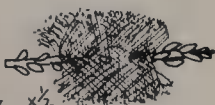
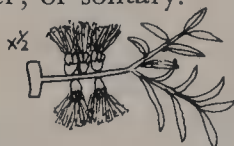
- B. Leaves scattered or alternate.

- C. Flowers in globular or cylindrical-ovoid heads, terminal (often axillary as well).



Section 4 112

- C. Flowers in clusters; axillary or lateral; or in spikes not terminal, the axis growing out long before flowering is over; or solitary.



Section 5 127

## Section 1

- A. Leaves opposite.

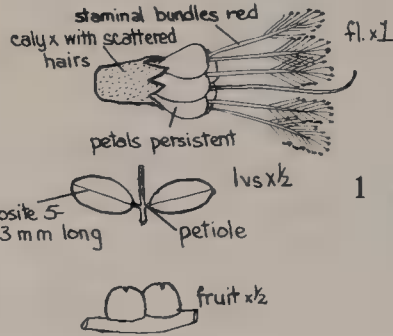
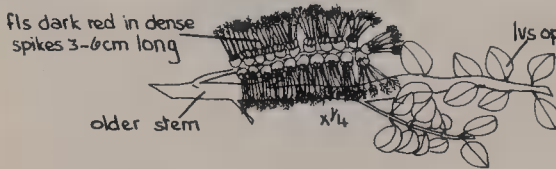
- B. Leaves 5-13 mm long.

C. Leaves petiolate; petals persistent.

Habit: Shrub 1-4 m high, growing on granite outcrops.

Distribn: Co (Norseman), Ey (C) (Fitzgerald R., Stokes Inlet), Recherche Arch.

Flg: Oct-Jan



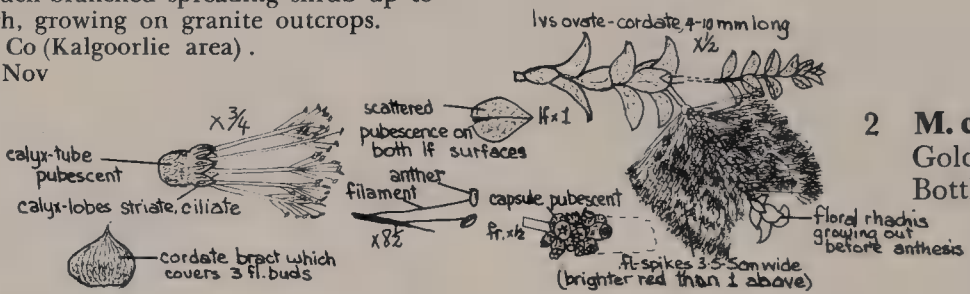
1 ***M. elliptica***  
Granite  
Bottlebrush

C. Leaves sessile; petals deciduous.

Habit: Much-branched spreading shrub up to 2 m high, growing on granite outcrops.

Distribn: Co (Kalgoorlie area).

Flg: Sept-Nov



2 ***M. coccinea***  
Goldfields  
Bottlebrush

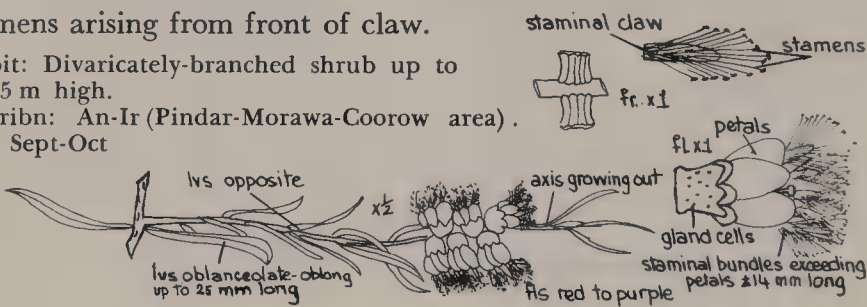
B. Leaves 2 cm or more long.

C. Stamens arising from front of claw.

Habit: Divaricately-branched shrub up to 1.5 m high.

Distribn: An-Ir (Pindar-Morawa-Coorow area).

Flg: Sept-Oct



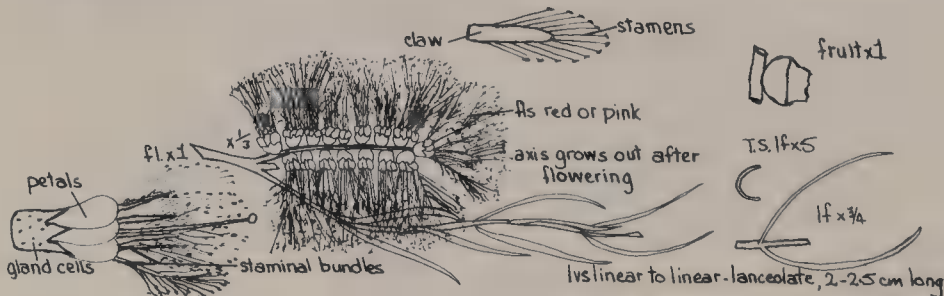
3 ***M. steedmanii***

C. Stamens on side of claw.

Habit: Shrub 1-2 m high.

Distribn: An, Av (Yorkrakine), Co (Merredin, Norseman), Ey, Ey (C) (Esperance), St (C).

Flg: Aug-Nov



4 ***M. fulgens***  
Scarlet  
Honey-myrtle

A. Leaves alternate.

## B. Leaves long, usually over 1 cm and up to 4 cm.

## C. Leaves linear, flat or semi-terete.

## D. Leaves flat or concave, acute.

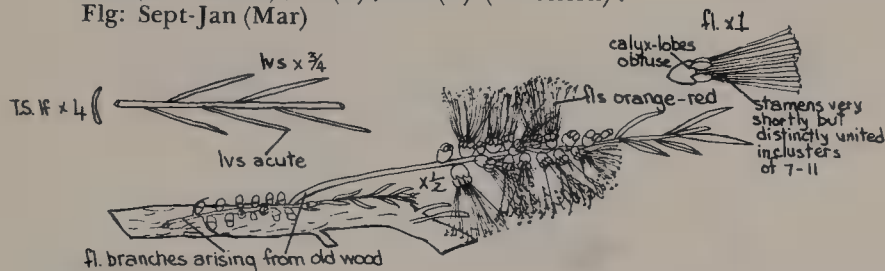
Habit: Multi-stemmed shrub up to 2 m high.

Distribn: Da-Da (C) (Cannington, Bullsbrook,

Bunbury), Ey (C) (Lucky Bay), Le (C),

St (Mt Barker), Wa (C) (Busselton).

Flg: Sept-Jan (Mar)

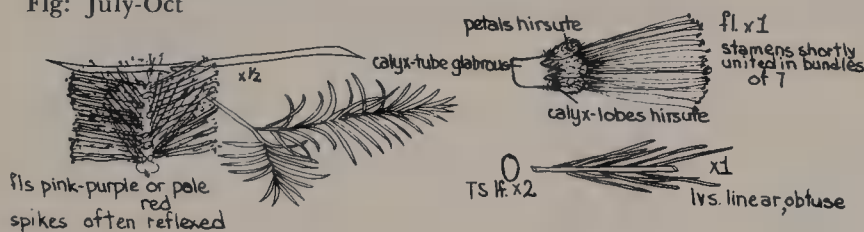
5 ***M. lateritia***  
Robin Red-breast  
Bush

## D. Leaves semi-terete, obtuse.

Habit: Much-branched shrub up to 1.5 m high.

Distribn: Ir (Murchison R. area).

Flg: July-Oct

6 ***M. calothamnoides***

## C. Leaves lanceolate, oblanceolate or obovate.

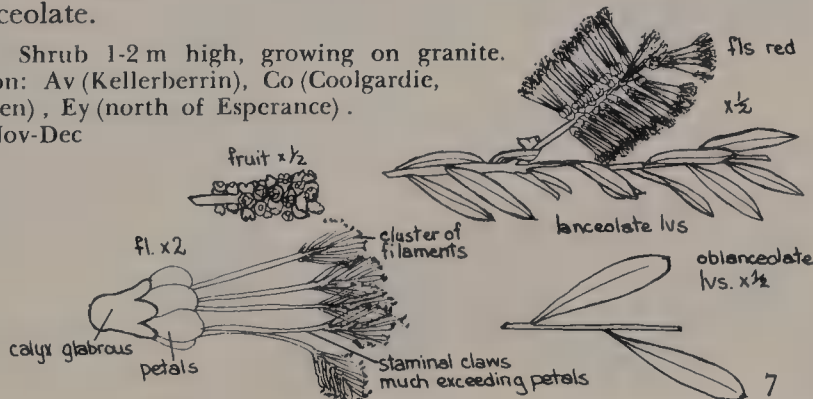
## D. Leaves 2.5-4 cm long, lanceolate to oblanceolate.

Habit: Shrub 1-2 m high, growing on granite.

Distribn: Av (Kellerberrin), Co (Coolgardie,

Hyden), Ey (north of Esperance).

Flg: Nov-Dec

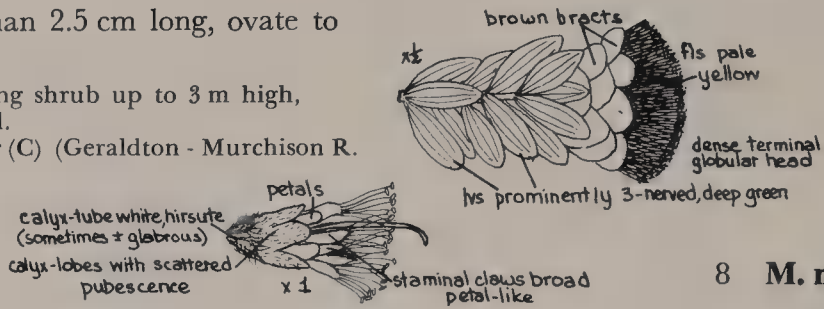
7 ***M. macronychia***

- D. Leaves less than 2.5 cm long, ovate to obovate.

Habit: Spreading shrub up to 3 m high, rough-barked.

Distribn: Ir, Ir (C) (Geraldton - Murchison R. area).

Flg: Aug-Oct



8 ***M. megacephala***

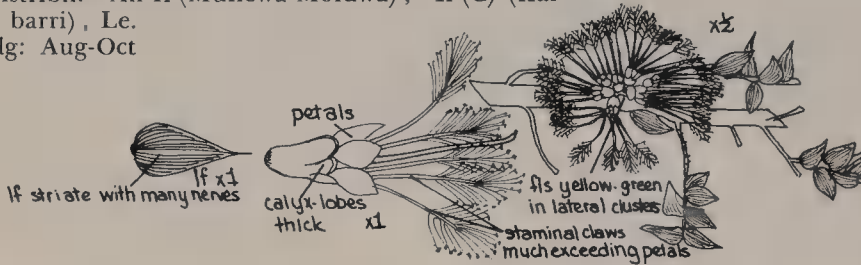
- B. Leaves less than 1 cm long.

- C. Leaves ovate-cordate, pungent.

Habit: Low, spreading or sprawling shrub up to 40 cm high.

Distribn: An-Ir (Mullewa-Morawa), Ir (C) (Kalbarri), Le.

Flg: Aug-Oct



9 ***M. cardiophylla*  
var. *longistaminea***

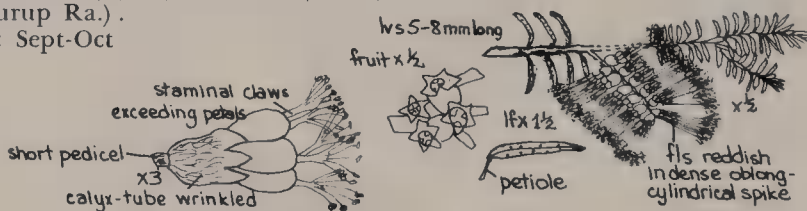
- C. Leaves linear-lanceolate to ovate-lanceolate, acute or obtuse.

- D. Leaves linear-lanceolate, acute; staminal claws exceeding petals.

Habit: Densely-branched shrub 2-3 m high.

Distribn: Ey (C) (Mts Barren), St (Porongurup Ra.).

Flg: Sept-Oct



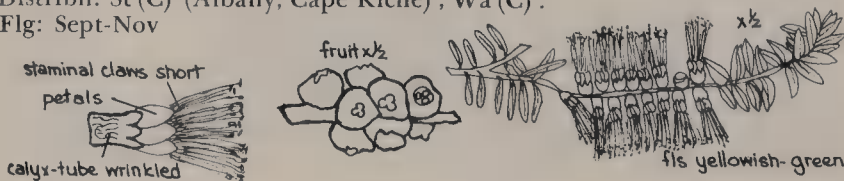
10 ***M. blaeriifolia***

- D. Leaves ovate-lanceolate, obtuse; staminal claws shorter than petals.

Habit: Spreading shrub 1-3 m high.

Distribn: St (C) (Albany, Cape Riche), Wa (C).

Flg: Sept-Nov



11 ***M. diosmifolia***

## Section 2

- A. Leaves peltately attached, mostly under 4 mm long (except *M. quadrifaria* in which lower leaves may be up to 6 mm long).

flat depression or areole



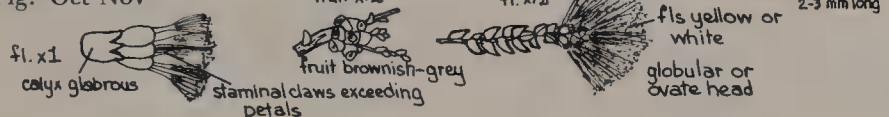
- B. Branchlets not excavated for leaf attachment.

- C. Leaves very thick, obtuse, spreading.

Habit: Dense erect shrub up to 5 m high.

Distribn: Ey (Ravensthorpe), Ey (C) (Fitzgerald R.).

Flg: Oct-Nov

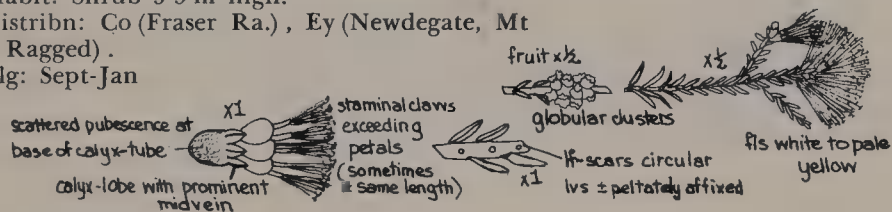
12 *M. cucullata*

- C. Leaves narrow, distichous, in 4 rows.

Habit: Shrub 3-5 m high.

Distribn: Co (Fraser Ra.), Ey (Newdegate, Mt Ragged).

Flg: Sept-Jan

13 *M. quadrifaria*

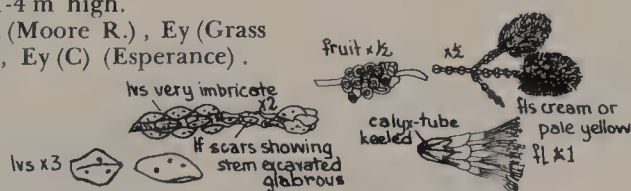
- B. Branches excavated for scale-like leaves ( $\pm 1$  mm long).

- C. Leaves spirally arranged; fruiting heads dense.

Habit: Erect shrub 1-4 m high.

Distribn: Av, Co, Da (Moore R.), Ey (Grass Patch, Newdegate), Ey (C) (Esperance).

Flg: Aug-Dec

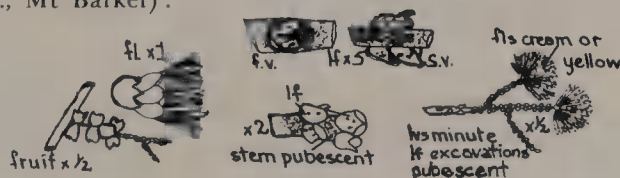
14 *M. thyoides*

- C. Leaves in whorls of 3; fruiting heads loose.

Habit: Shrub 1-3 m high, with numerous short slender branches.

Distribn: St (Stirling Ra., Mt Barker).

Flg: Aug-Oct

15 *M. micromera*



A. Leaves not peltately attached, mostly above 4 mm long.

B. Leaves oblong or linear, thick, convex below.

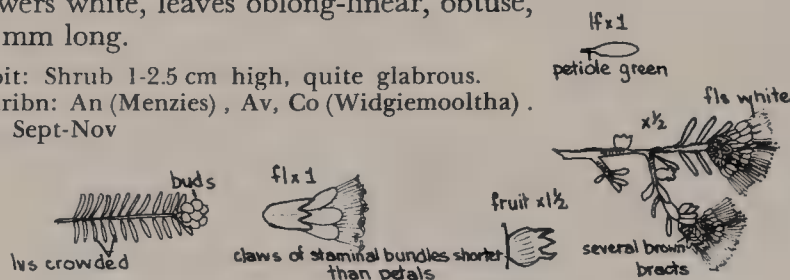
C. Flowers several in head.

D. Flowers white, leaves oblong-linear, obtuse, 4-6 mm long.

Habit: Shrub 1-2.5 m high, quite glabrous.

Distribn: An (Menzies), Av, Co (Widgiemooltha).

Flg: Sept-Nov



16 ***M. cymbifolia***

D. Flowers purple; leaves linear-terete, 3-7 mm long.

Habit: Rigid, divaricately-branched glabrous shrub. Heads large, globular; calyx-tube pubescent when young; calyx-lobes glabrous; staminal bundles up to 1 cm long, long-hairy inside.

Distribn: St (Cranbrook-Warrungup).

Flg: Not known

(No specimen sighted)

17 ***M. dorrien-smithii***

C. Flowers 1-3 in head.

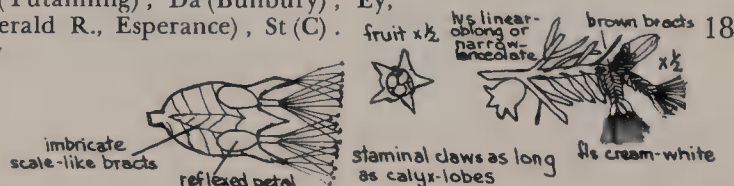
D. Leaves mostly 6-10 mm long; flowers glabrous.

Habit: Shrub 1.5-3 m high, with rigid tortuous branches; bark deciduous in paper-like layers.

Distribn: Av (Tutanning), Da (Bunbury), Ey,

Ey (C) (Fitzgerald R., Esperance), St (C).

Flg: Sept-Nov



18 ***M. cuticularis***

Salt-water  
Paperbark

Leaves thick, obtuse,  $\pm$  5 mm long; involucre bracts few.

Distribn: St (Cranbrook).

18a ***M. cuticularis***  
var. ***brachyphylla***

Leaves obtuse  $\pm$  1 cm long, flowers large, 5-8 at ends of branches; bracts numerous and like a rampart.

Distribn: St (Cranbrook).

18b ***M. cuticularis***  
var. ***obvallata***



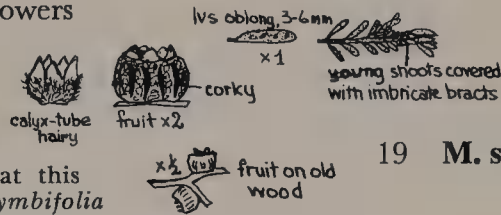
- D. Leaves mostly under 6 mm long; flowers and young leaves pubescent.

Habit: Bushy shrub up to 1 m high.

Distribn: Co (Coolgardie).

Flg: Sept-Nov

Note. Blackall (1954) considered that this species was probably a variety of *M. cymbifolia* (no 16). Not validated.



19 *M. sparsiflora*

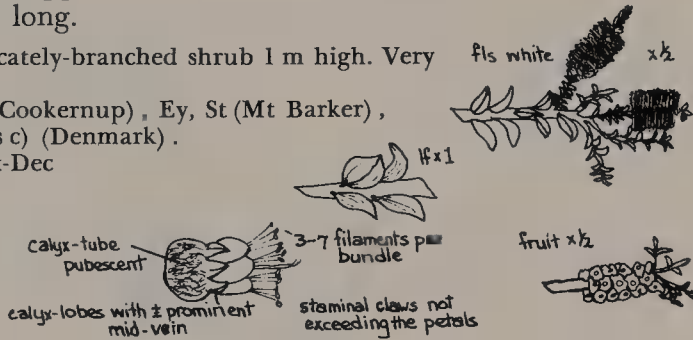
- B. Leaves ovate, ovate-cordate or ovate-lanceolate.

- C. Leaves ovate, upper ones at least imbricate, 3-7(10) mm long.

Habit: Divaricately-branched shrub 1 m high. Very variable.

Distribn: Da (Cookernup), Ey, St (Mt Barker), St (C), Wa (s c) (Denmark).

Flg: (July) Oct-Dec



20 *M. densa*

Leaves small, thick, 5-10 mm long, acute, 3-veined; flowering head cylindrical, ± 2 cm long.

Distribn: St.

20a *M. densa*  
var. *dorrien-smithii*

Leaves small, ± 3 mm long, obtuse, 1-veined; flowering head globose to ovoid-globose.

Distribn: St.

20b *M. densa*  
var. *pritzelii*

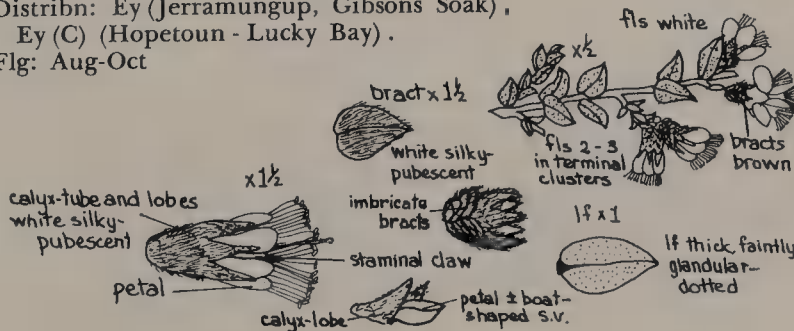
- C. Leaves not imbricate.

- D. Flowers 1-3 together; bracts numerous, imbricate.

Habit: Shrub 50 cm-2 m high.

Distribn: Ey (Jerramungup, Gibsons Soak), Ey (C) (Hopetoun - Lucky Bay).

Flg: Aug-Oct



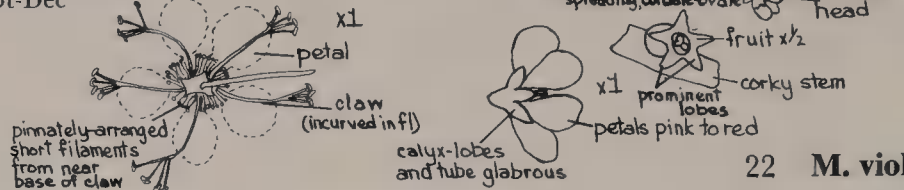
21 *M. calycina*

D. Flowers in lateral and axillary clusters as well as terminal heads; bracts few, small.

Habit: Very spreading shrub, 50 cm-1.5 m high.

Distribn: Ey (Jerramungup), Ey (C) (Bremer Bay), St (Stirling Ra.), St (C).

Flg: Sept-Dec



22 ***M. violacea***

Leaves smaller, shortly-petiolate. Distribn: Ey (C), St (C).

22a ***M. violacea***  
var. *petiolata*

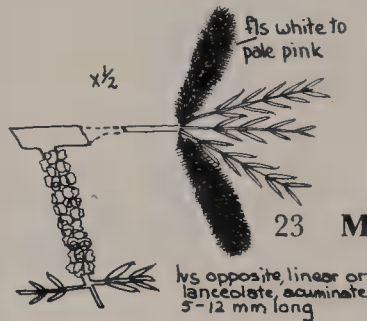
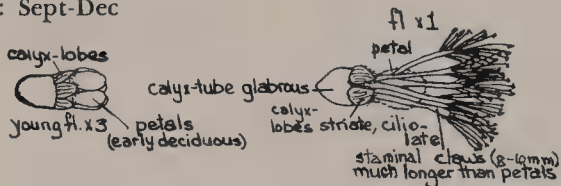
**Section 3**

A. Flowers in oblong or cylindrical spikes.

Habit: Shrub up to 1.5 m high.

Distribn: Av (Goomalling), Ir, Ir (C) (Kalbarri), Le (Watheroo).

Flg: Sept-Dec



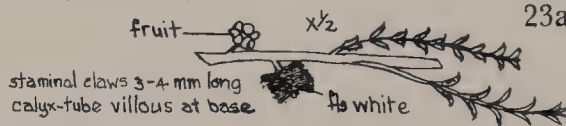
23 ***M. eleutherostachya***

A more rigid plant with short spreading leaves; leaves very rigid, decussate on the lower branches.

Distribn: Av (Wongan Hills), Co (Norseman), Ey (Grass Patch).

Flg: Sept-Feb (May)

Note. See Carrick and Chorney (1979).



23a ***M. adnata***  
[*M. eleutherostachya*  
var. *abietina*]

A. Flowers in axillary or lateral clusters or small heads at base of lateral shoots.

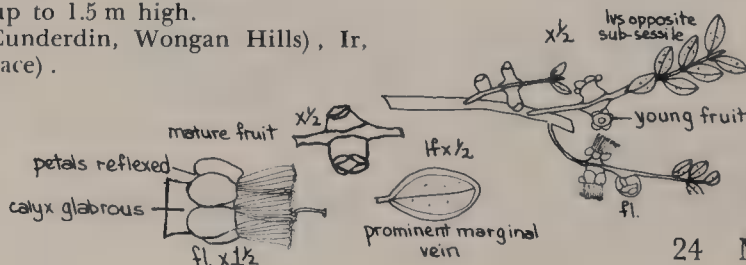
B<sub>1</sub> Flowers closely sessile in pairs at base of leafy branchlets.

C. Leaves ovate-elliptical  $\pm$  8 mm long; flowers pink-purple.

Habit: Shrub up to 1.5 m high.

Distribn: Av (Cunderdin, Wongan Hills), Ir, Le, St (L. Grace).

Flg: Sept-Dec



24 ***M. platycalyx***

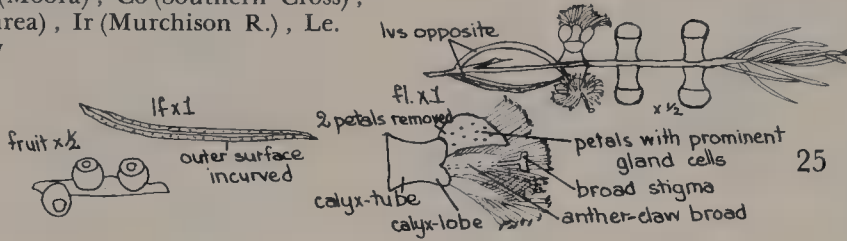
- C. Leaves linear,  $\pm$  terete, 2-5 cm long; flowers mauve-white.

Habit: Spreading shrub 1-2 m high.

Distribn: Av (Moora), Co (Southern Cross),

Da (Perth area), Ir (Murchison R.), Le.

Flg: Aug-Nov



25 ***M. radula***  
Graceful  
Honey-myrtle

- B<sub>2</sub> Flowers in axillary or lateral clusters on old wood.

- C. Flowers pale pink to creamy-white or straw-coloured; leaves lanceolate, ovate or oblong.

- D. Leaves acuminate 5-10 mm long.

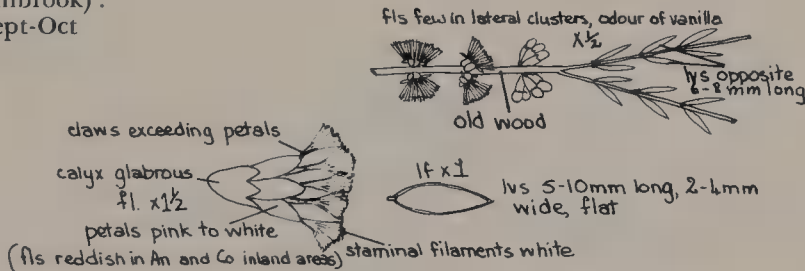
- E. Leaves narrow to broad lanceolate or ovate, shortly petiolate.

Habit: Glabrous broom-like shrub 1-2 m high.

Distribn: An, Av (Tammin), Co (Burracoppin),

Ey (Ravensthorpe), Ey (C) (Mt Barren), St (Cranbrook).

Flg: Sept-Oct



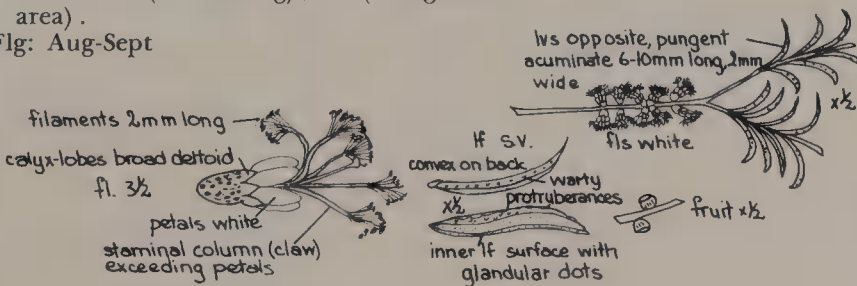
26 ***M. acuminata***

- E. Leaves oblong-lanceolate, subsessile.

Habit: Shrub 3.5-6 m high, with ragged bark.

Distribn: Av (Cowcowing), Co (Coolgardie area).

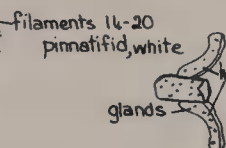
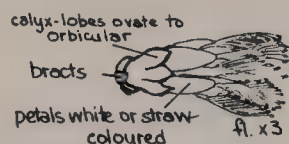
Flg: Aug-Sept



27 ***M. websteri***

- D. Leaves obtuse, shortly oblong, thick, sessile, 2-3 mm long.

Habit: Diffuse shrub up to 1 m high.  
 Distribn: Co (Hatters Hill area). Rare.  
 Flg: Sept



28 ***M. agathosmoides***

- C. Flowers purplish-red; leaves cordate-ovate.

22 ***M. violacea***  
 (see p. 110)

- B<sub>3</sub> Flowers at base of lateral leafy shoots.

- C. Flowers white; stamens 2-4 in each bundle.

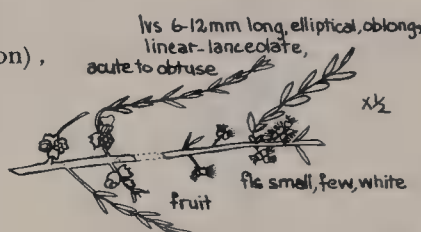
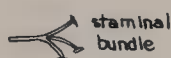
Habit: Glabrous shrub up to 1.3 m high.  
 Distribn: Da (Canning R.), Da (C) (L. Clifton),  
 St (C), Wa (n c) (Busselton area).  
 Flg: Jan-Feb (April)



style curved

2-4 stamens in each bundle

petals reflexed



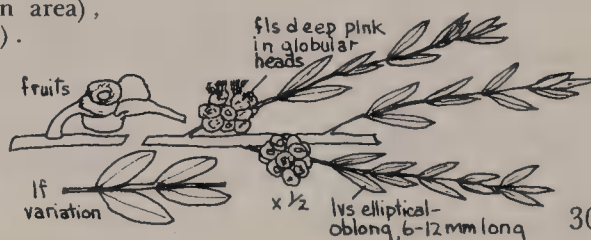
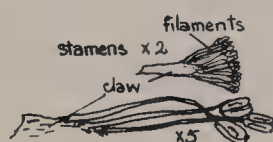
29 ***M. leptoclada***

- C. Flowers red; stamens 20-30 in each bundle.

Habit: Glabrous shrub with slender twiggy branches.

Distribn: Av, Co (Merredin area),  
 Wa (Brockman Highway).

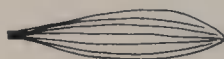
Flg: Oct-Nov



30 ***M. basiccephala***

#### Section 4

- A. Leaves prominently 3-7-nerved above, flat.



Subsection 1 Page  
113

- A. Leaves 1-nerved or nerveless above (or ± obscurely 1-3-nerved above and underneath).

- B. Flowers red to violet.

Subsection 2 115

- B. Flowers white to yellow, occasionally suffused purple.

Subsection 3 120


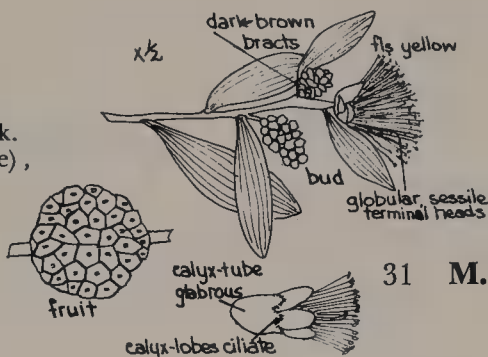
## Subsection 1

A. Leaves 2.5-7 cm long.

## B. Leaves distinctly 5-7-nerved.

Habit: Tree 10 m high, with papery bark.  
 Distribn: Ey (C) (Fitzgerald R. - Esperance),  
 Recherche Arch., St (C).  
 Flg: Sept-Dec

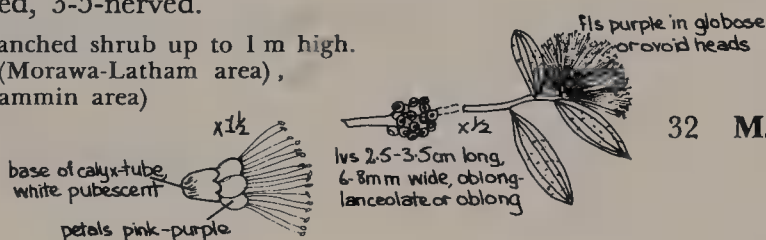
lvs 3-7 cm long,  
 9-21 mm broad,  
 obovate to  
 oblong


31 *M. globifera*

## B. Leaves 3-5-nerved.

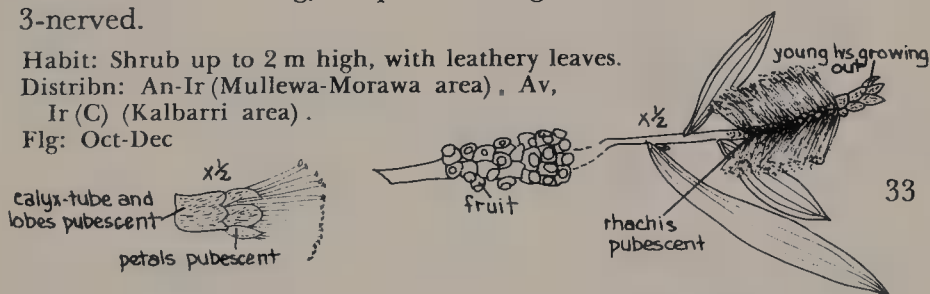
## C. Leaves 2.5-3.5 cm long, prominently glandular-dotted, 3-5-nerved.

Habit: Much-branched shrub up to 1 m high.  
 Distribn: An-Ir (Morawa-Latham area),  
 Av (Wubin-Tammin area)  
 Flg: Oct-Nov

32 *M. conothamnoides*

## C. Leaves 3.5-7 cm long, no prominent glands, 3-nerved.

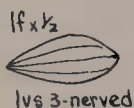
Habit: Shrub up to 2 m high, with leathery leaves.  
 Distribn: An-Ir (Mullewa-Morawa area), Av,  
 Ir (C) (Kalbarri area).  
 Flg: Oct-Dec

33 *M. oldfieldii*A. Leaves less than 2.5 cm long.

## B. Flower-heads yellow.

## C. Leaves obovate.

Habit: Shrub up to 3 m high.



8 *M. megacephala*  
 (see p. 106)

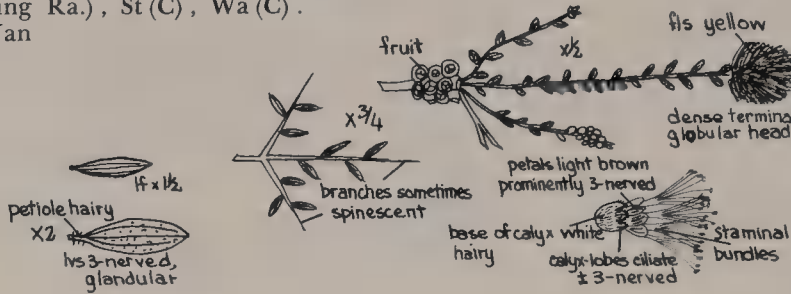


## C. Leaves lanceolate or elliptical.

Habit: Glabrous shrub with slender, often spinescent branches, up to 1 m high.

Distribn: Da (C) (Bunbury), Ey (C) (Gairdner R.), St (Stirling Ra.), St (C), Wa (C).

Flg: Oct-Jan

34 *M. thymoides*

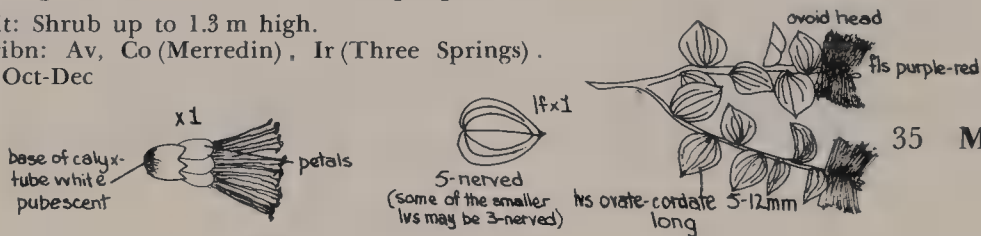
## B. Flower-heads pink to purple-red or violet.

## C. Heads globose or ovoid; flowers purple-red.

Habit: Shrub up to 1.3 m high.

Distribn: Av, Co (Merredin), Ir (Three Springs).

Flg: Oct-Dec

35 *M. cordata*

Leaves ovate-oblong, regularly 3-nerved (as compared with the more common occurrence of the 5-nerved leaf in the type species).

Distribn: An (Mt Churchman area).

Flg: Nov

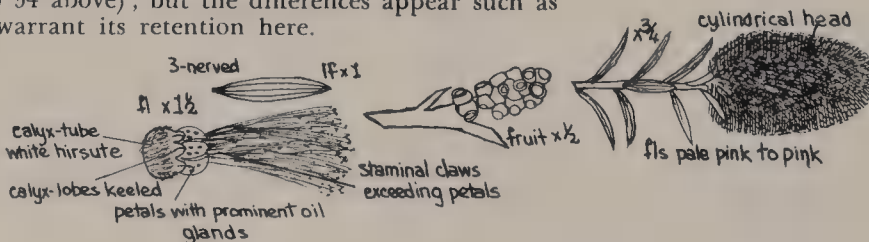
35a *M. cordata*  
var. *ovata*

## C. Heads ovoid to cylindrical; flowers pale pink to pink.

Habit: Shrub, erect or straggling, with linear-lanceolate, pungent, striate leaves.

Distribn: Ey (Jerramungup), Ey (C) (Bremer Bay - Cape Le Grand), St (Stirling Ra.), St (C).

Note. Domin (1921/22) considered that this taxon was probably a form or variety of *M. thymoides* (no 34 above), but the differences appear such as to warrant its retention here.

36 *M. striata*

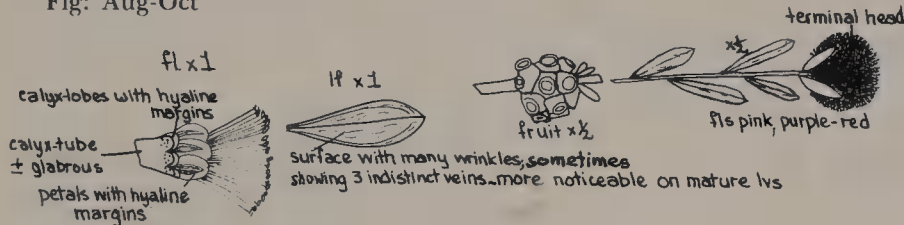


**Subsection 2****A.** Leaves flat.(alternate A p. 118)**B.** Leaves 1-2 cm long.**C.** Leaves obtuse or sometimes with small mucrone.**D.** Leaves smooth, elliptical to oblong-obovate  
1.5-2 cm (rarely up to 4 cm) long.

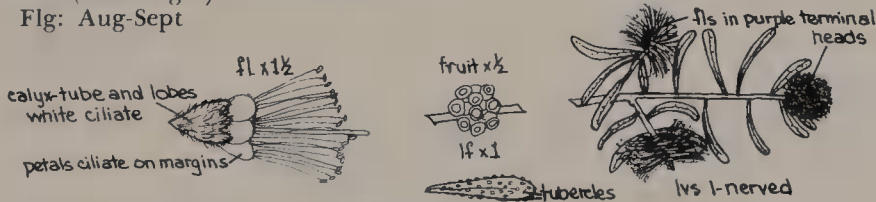
Habit: Shrub 1-2 m high.

Distribn: Ey (C) (Mt Barren, Doubtful I.).

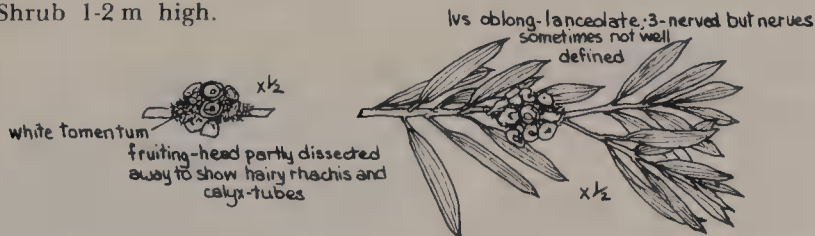
Flg: Aug-Oct

**37 M. nesophila****D.** Leaves tuberculate, oblanceolate, thick,  
leathery, 1-2 cm long.Habit: Low shrub  $\pm$  25 cm high, branches  
divaricate.Distribn: Av (Wongan Hills, Moora),  
Ir (Marchagee).

Flg: Aug-Sept

**38 M. sclerophylla****C.** Leaves tapering into a long pungent point

Habit: Shrub 1-2 m high.

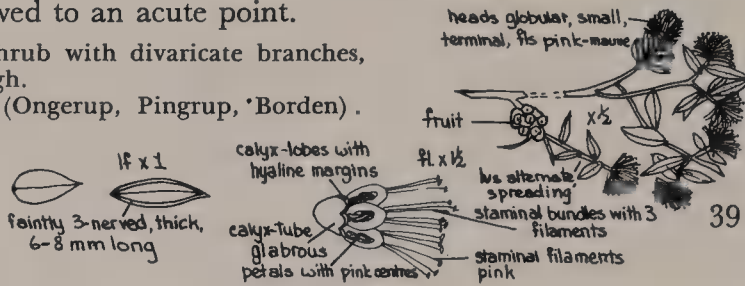
**33 M. oldfieldii**  
(see p. 113)**B.** Leaves under 1 cm long.

## C. Leaves narrowed to an acute point.

Habit: Rigid shrub with divaricate branches,  
50 cm-1 m high.

Distribn: Ey-St (Ongerup, Pingrup, Borden).

Flg: Sept-Oct

39 *M. polycephala*

## C. Leaves obtuse.

## D. Leaves broad-obovate to ovate-orbicular or spatulate.

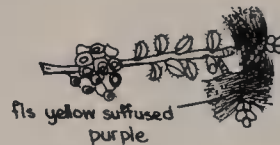
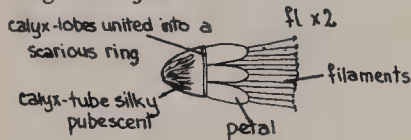


## E. Calyx-lobes united into a very narrow scarious ring.

Habit: Shrub up to 1 m high, with rigid  
pubescent branches.

Distribn: Av, Da (Regans Ford, Mogumber),  
Le (Dandaragan).

Flg: Nov-Jan

40 *M. ciliosa*

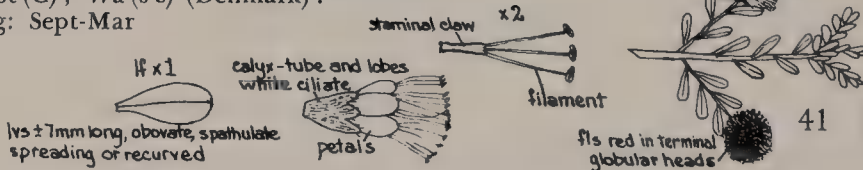
## E. Calyx-lobes distinct and conspicuous.

## F. Staminal bundles with 2-5 (commonly 3) filaments; flowers red.

Habit: Shrub with short rigid branches.

Distribn: Ey, Ey (C), St (Stirling Ra.),  
St (C), Wa (s c) (Denmark).

Flg: Sept-Mar

41 *M. spathulata*

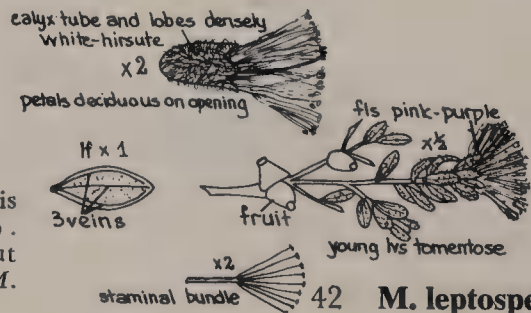
## F. Staminal bundles with 9-11 filaments; flowers pink-purple.

Habit: Shrub 1-1.5 m high.

Distribn: Av (Tammin).

Flg: Oct-Dec

Note. Bentham (1866) considered that this species was conspecific with *M. ciliosa* (no 40). Diels and Pritzel (1904), however, pointed out that it could be easily separated from *M. ciliosa* by its tomentose young leaves.

42 *M. leptospermoides*

D. Leaves linear to linear-cuneate or linear oblong-obovate.

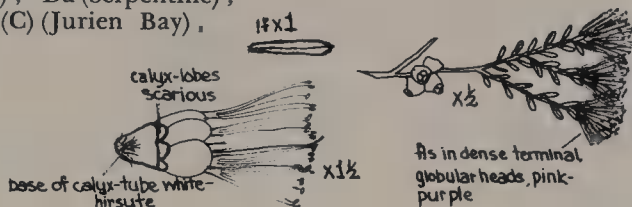


E. Leaves linear to linear-cuneate, mostly 6-8 mm long.

Habit: Shrub 50 cm-2 m high.

Distribn: Av (Cowcowing), Da (Serpentine), Ey (Ravensthorpe), Le (C) (Jurien Bay), St, St (C), Wa (C).

Flg: Sept-Dec



43 *M. seriata*

E. Leaves linear-oblong to linear-obovate, 4-8 mm (sometimes up to 12 mm) long.

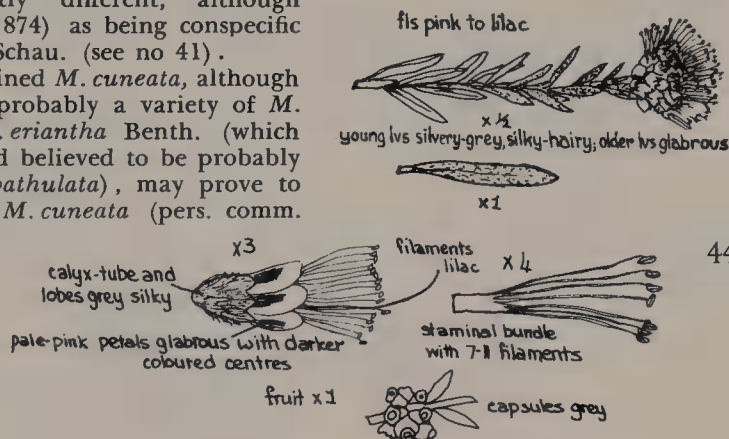
F. Staminal claw with 7-9 filaments.

Habit: Bushy shrub up to 2 m high.

Distribn: Av (Kellerberrin), Co (Kumarl), Ey, St.

Flg: Sept-Nov

Note. *M. cuneata* Turcz. is retained here as appearing sufficiently different, although listed by Mueller (1874) as being conspecific with *M. spathulata* Schau. (see no 41). Blackall (1954) retained *M. cuneata*, although he believed it was probably a variety of *M. seriata* (no 43). *M. eriantha* Benth. (which Domin (1921/2) had believed to be probably identical with *M. spathulata*), may prove to be conspecific with *M. cuneata* (pers. comm. A. S. George).



44 *M. cuneata*

F. Staminal claw with 3-5 filaments.

Habit: Shrub.

Distribn: Drummond 5th coll. Ey, Ey (C), St (C).

Flg: Not recorded

(No specimen sighted.)

Flowering head terminal, sub-globose, densely flowered; calyx-tube bell-shaped, pubescent; calyx-lobes membranous; leaves oblong-obovate, 6-8 mm long; flowers lilac; bracts brown.

Note. This species was described by Turczaninow in 1852 from Drummond's 5th coll., no 172. See note on *M. undulata* var. *minor* p. 128, no 72.

44a *M. concinna*

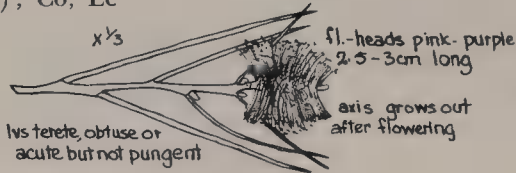
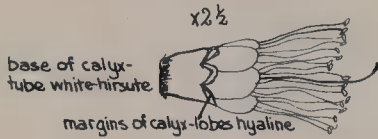
A. Leaves terete or semi-terete.  
(except *M. pentagona* var. *latifolia*, no 46b)

B. Leaves 5-10 cm long.

Habit: Shrub up to 2 m high.

Distribn: An-Ir (Yalgoo-Mullewa), Co, Le  
(Watheroo).

Flg: Aug-Oct



45 ***M. nematophylla***  
Wiry  
Honey-myrtle

B. Leaves under 2.5 cm long.

C. Leaves mainly glabrous (often hairy when young).

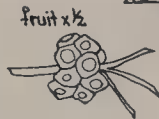
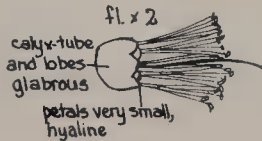
(alternate C p. 120)

D. Leaves mainly pungent-pointed.

Habit: Shrub 50 cm-3 m high.

Distribn: Av (Cunderdin, Cowcowing),  
Ey-St (Ongerup area), Ey (C) (Hopetoun,  
Esperance), St (C).

Flg: Sept-Nov



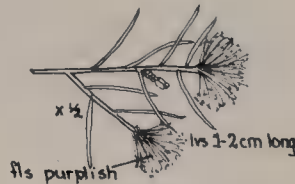
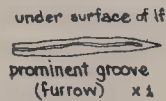
46 ***M. pentagona***

Leaves linear-subulate, terete, rigid, furrowed below.

Habit: Spreading tall shrub.

Distribn: Ey (Mt Ragged), St (C).

Flg: Oct-Nov



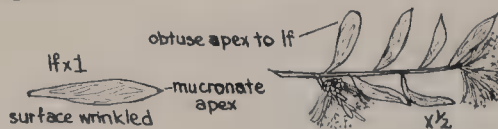
46a ***M. pentagona***  
var. *subulifolia*

Leaves oblong-cuneate, rigid, mucronate, sometimes obtuse.

Habit: Shrub 30-60 cm high.

Distribn: Ey, Ey (C) (Fitzgerald R.,  
Esperance).

Flg: Oct-Nov



46b ***M. pentagona***  
var. *latifolia*

D. Leaves mainly obtuse.

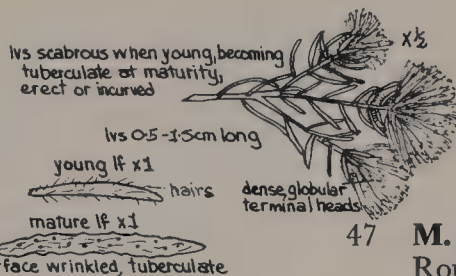
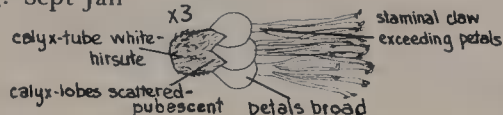
E. Calyx-tube hirsute.

## F. Flowers magenta-red.

Habit: Bushy shrub up to 2 m high.

Distribn: Av, Co (Hyden), Da (Swan R.), Ey, Ey (C) (E. Mt Barren, Esperance), Ir, Ir (C), Le, Le (C) (Jurien Bay), St.

Flg: Sept-Jan



47

**M. scabra**

Rough

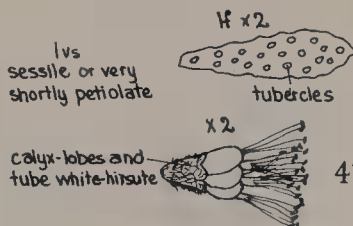
Honey-myrtle

## F. Flowers pink.

Habit: Glabrous shrub with markedly tuberculate leaves.

Distribn: Av (York-Meckering).

Flg: Sept

Note. Blackall (1954) considered this to be a variety of *M. scabra* (see above). Not validated. It may prove to be conspecific.

47a

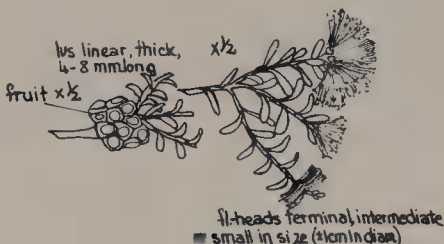
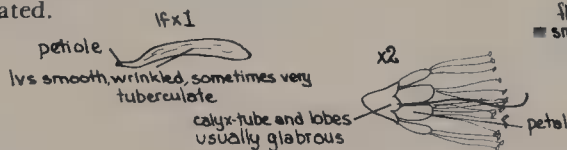
**M. tuberculata**E. Calyx-tube  $\pm$  glabrous; flowers pink to purple.

## F. Flowers small, pink; calyx-tube glabrous or sometimes slightly villous; calyx-lobes truncate.

Habit: Densely-branched bushy shrub up to 1.5 m high.

Distribn: Ey (Ravensthorpe), Ey (C), St (C).

Flg: Sept-Nov

Note. Blackall (1954) regarded *M. subtrigona* Schau. as a variety of *M. scabra* (no. 47, preceding). Not validated.

48

**M. subtrigona**

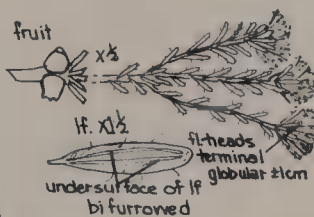
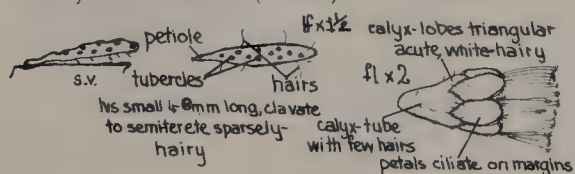
## F. Flowers purple; calyx-tube slightly hairy; lobes triangular-acute.

Habit: Low-branching shrub 50-70 cm high.

Distribn: Ir (Ajana, Yuna), Ir (C)

(Geraldton area).

Flg: Sept-Nov

Note. Blackall (1954) considered this to be a variety of *M. scabra* (no. 47). Not validated.

49

**M. eremaea**[*M. psammophila*]



C. Leaves mainly hoary-tomentose or hirsute at maturity.

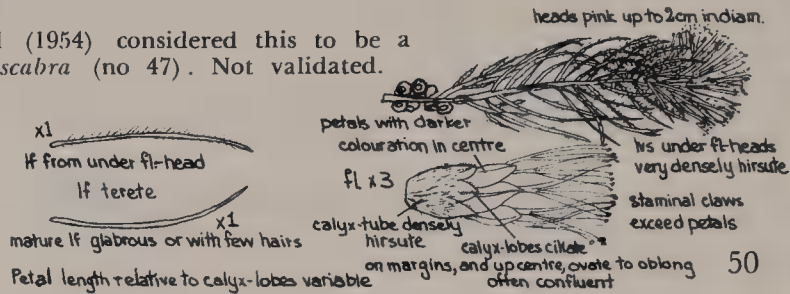
D. Leaves hirsute with spreading greyish-white hairs.

Habit: Prostrate or very spreading shrub.

Distribn: Co (Southern Cross), Da (Mogumber),  
Da (C) (Yanchep), Ir, Ir (C) (Geraldton,  
Kalbarri), Le, Le (C).

Flg: Sept-Dec

Note. Blackall (1954) considered this to be a  
variety of *M. scabra* (no 47). Not validated.



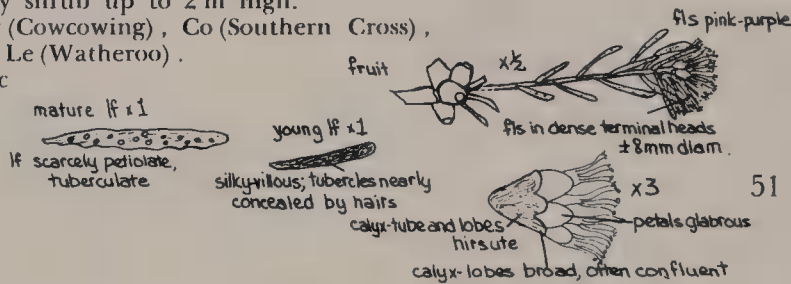
**M. trichophylla**

D. Leaves hoary-tomentose or silky-villous, wearing off with age.

Habit: Bushy shrub up to 2 m high.

Distribn: Av (Cowcowing), Co (Southern Cross),  
Ir, Ir (C), Le (Watheroo).

Flg: Sept-Dec



**M. holosericea**

### Subsection 3

A. Leaves ovate to obovate, oblong, lanceolate or elliptical.

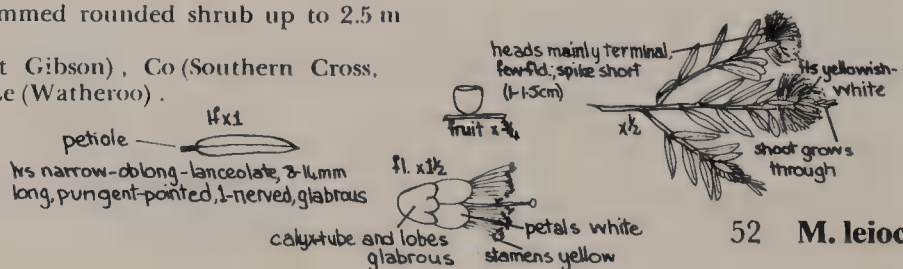
B. Flowers few in the head.

C. Leaves with a definite slender petiole; fruit rounded at base.

Habit: Many-stemmed rounded shrub up to 2.5 m high.

Distribn: An (Mt Gibson), Co (Southern Cross,  
Coolgardie), Le (Watheroo).

Flg: Aug-Oct



**M. leiocarpa**

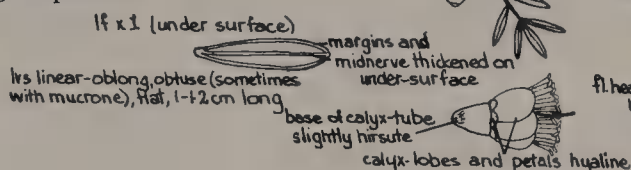


C. Leaves  $\pm$  sessile; fruit flat at base.

Habit: Shrub up to 1 m high.

Distribn: Ir (C) (Kalbarri area).

Flg: Sept-Oct

53 *M. leiopyxis*

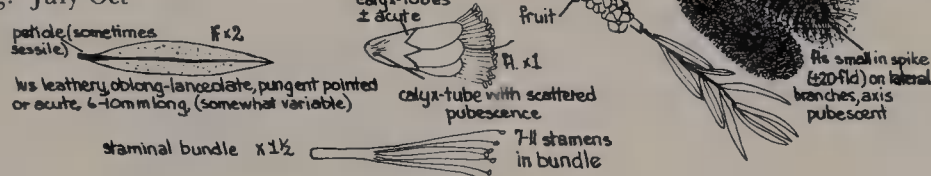
## B. Flowers very numerous in the head.

## C. Flowers in dense cylindrical spikes.

Habit: Shrub up to 1.5 m high, growing in swampy land.

Distribn: Da (Jandakot, Pinjarra), Ey (C) (Israelite Bay), St (C).

Flg: July-Oct

54 *M. polygaloides*

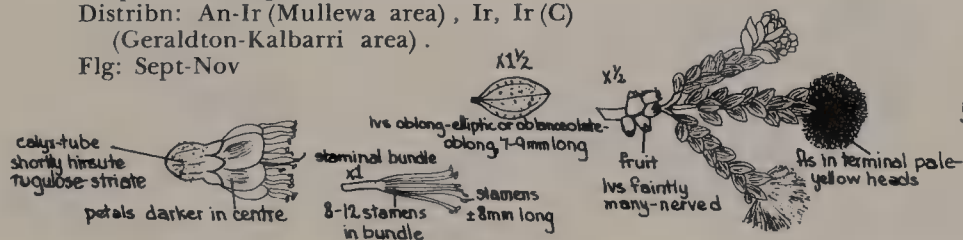
## C. Flowers in dense globular heads.

## D. Leaves glabrous; lobes of calyx round, not joined together.

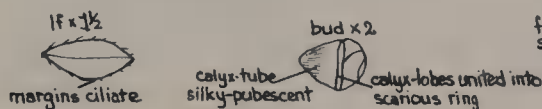
Habit: Shrub with tortuous, divaricate branches, up to 2 m high.

Distribn: An-Ir (Mullewa area), Ir, Ir (C) (Geraldton-Kalbarri area).

Flg: Sept-Nov

55 *M. depressa*

## D. Leaves with ciliate margins; calyx-lobes united into a very narrow scarious ring.

40 *M. cilosa*  
(see p. 116)

## A. Leaves narrow-linear to narrow-lanceolate or terete.

B. Leaves pubescent-tomentose or hirsute (often becoming glabrous with age).

C. Leaves hoary-pubescent or white-tomentose.

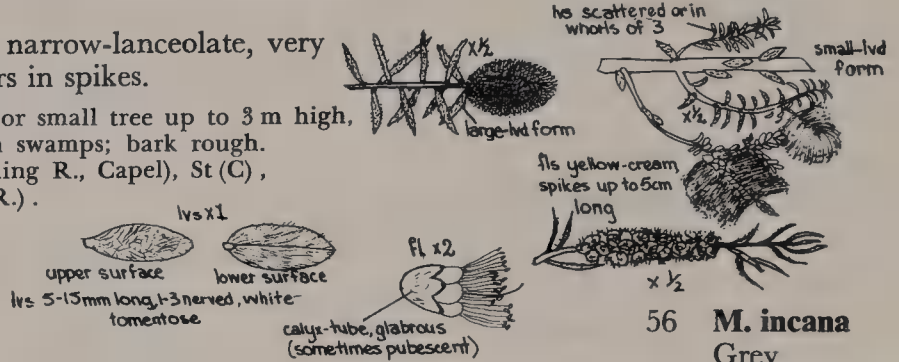
D. Leaves linear to narrow-lanceolate, very spreading; flowers in spikes.

Habit: Tall shrub or small tree up to 3 m high, often growing in swamps; bark rough.

Distribn: Da (Canning R., Capel), St (C),

Wa (n c) (Vasse R.).

Flg: Nov



56 **M. incana**  
Grey  
Honey-myrtle

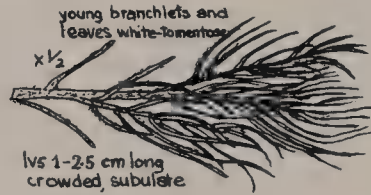
D. Leaves terete, crowded; flowers few in heads.

Habit: Rigid shrub up to 75 cm high.

Distribn: Av (York).

Flg: Not recorded

Note. No flowers present on specimen seen; (no 2426 coll. Preiss, Melb. herbarium.)



fls few together; calyx-tube white-tomentose; calyx-lobes longer than the calyx-tube and narrow; staminal claws as long as the calyx-lobes each with 7-9 filaments

57 **M. aspalathoides**

C. Leaves with scattered hairs (rarely glabrous); rhachis woolly-tomentose.

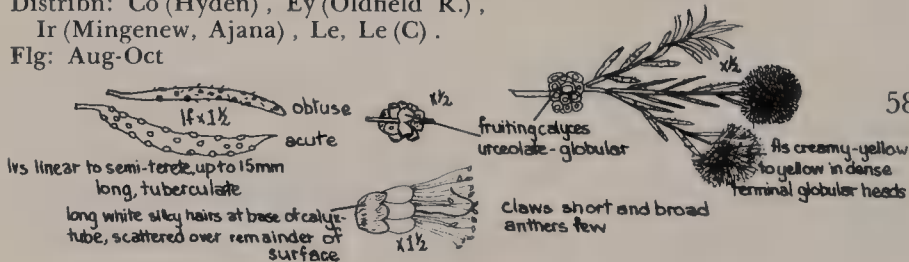
D. Leaves rough-surfaced ( $\pm$  hispid) or tuberculate,  $\pm$  erect.

Habit: Tall bushy shrub up to 2 m high,  $\pm$  hoary or hirsute, becoming glabrous with age.

Distribn: Co (Hyden), Ey (Oldfield R.),

Ir (Mingenew, Ajana), Le, Le (C).

Flg: Aug-Oct



58 **M. urceolaris**

Branches elongated, with less crowded leaves, scarcely villous; flowers rather smaller.

Distribn: Av (Cunderdin-Koorda),

Ir (C) (Murchison R.).

Flg: Sept-Oct

58a **M. urceolaris**  
var. **virgata**

- D. Leaves not rough-surfaced, spreading to  $\pm$  recurved.

Habit: Dense shrub up to 1 m high, loosely silky-hairy, eventually glabrous.

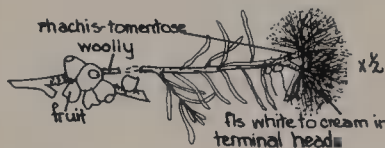
Distribn: Av, Co (Bullabulling), Da (C) (Kings Park, Yanchep), Ey, Ey (C), Ir, Ir (C) (Murchison R.), Le (C), Wa (C) (Walpole).

Flg: Aug-Dec

petiole  
lvs 8-12 mm long, narrow-linear acute but not pungent  
silky-hairy when young

calyx-tube shortly hirsute

staminal claw short  
filaments irregularly united



59 ***M. acerosa***

Bracts larger and more persistent.

Distribn: Ir, Ir (C) (Murchison R.).

Flg: Aug-Sept

59a ***M. acerosa***  
var. ***bracteata***

- B. Leaves glabrous.

- C. Leaves 1.5 cm or more long.

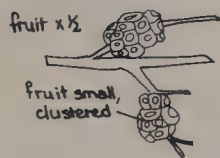
- D. Leaves terete; rhachis tomentose; calyx hairy or tomentose at least at base.

- E. Leaves with recurved tips, pungent.

Habit: Shrub 1-5 m high; bark grey, papery.

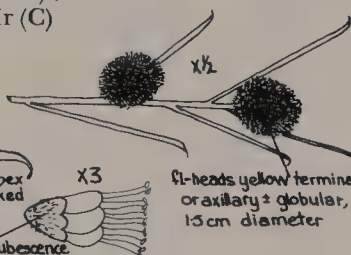
Distribn: An, Av (Tammin), Co (Kalgoorlie), Da (Swan R.), Ey (Young R.), Ir, Ir (C) (Murchison R.), St, Wa (C).

Flg: Aug-Nov



lvs 2-4 cm long, filiform, apex hooked

calyx-tube with scattered white pubescence



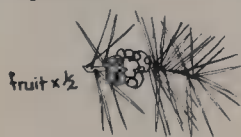
60 ***M. uncinata***  
Broom  
Honey-myrtle

- E. Leaves pungent, but tips not recurved.

Habit: Dense shrub up to 1 m high.

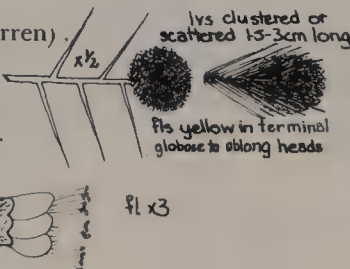
Distribn: Av (York), Co, Ey, Ey (C) (Mts Barren), St (Cranbrook).

Flg: Sept-Nov



inner and outer surfaces of valves pubescent

calyx-lobes and tube pubescent

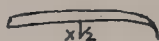


61 ***M. pungens***

- D. Leaves flat or flattish.

E. Shrubs up to 3 m high.

F. Leaves with recurved pungent tips.



60 ***M. uncinata***  
(see p. 123)

F. Leaves obtuse.



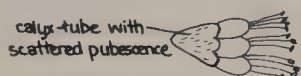
G. Leaves under 2 cm long.

Habit: Compact shrub up to 2 m high.

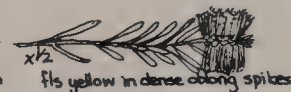
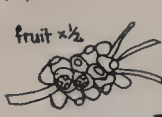
Distribn: Ey (Ravensthorpe), Ey (C)

(Fitzgerald R.), St.

Flg: Sept-Nov



fl. x 3



fl. x 1 1/2

petiolate, dark green

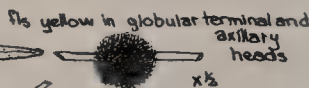
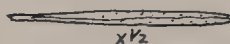
62 ***M. citrina***

G. Leaves 5-6 cm long.

Habit: Erect shrub up to 2 m high; young shoots silky-silvery.

Distribn: Ir (C) (Kalbarri).

Flg: Sept-Oct



fruit x 1/2

lvs linear-lanceolate, 1-nerved

63 ***M. concreta***

Leaves more acute, shorter (2.5-4 cm long); stamens purplish.

Distribn: Ir (C) (Murchison R., Hamelin Pool).

Flg: Aug-Sept

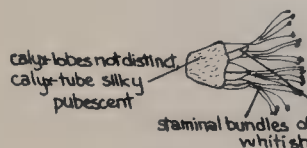
63a ***M. concreta***  
**var. *brevifolia***

E. Tree or tall shrub with white papery bark.

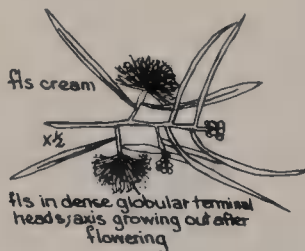
Habit: Spreading shrub or tree up to 9 m high.

Distribn: An (upper Murchison R.).

Flg: July-Sept



lvs linear-lanceolate 1.5-5 cm long  
Young lvs silky-pubescent becoming glabrous with age



64 ***M. glomerata***

C. Leaves under 1.5 cm long.

D. Leaves short, 2-6 mm long.

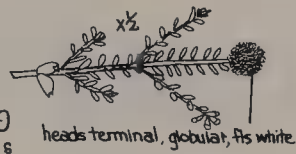
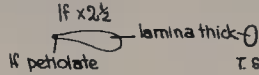
- E. Leaves very thick,  $\pm$  2 mm long, terete, spreading.

Habit: Small tree up to 4 m high.

Distribn: An, Co (Coolgardie-Norseman area).

Flg: Nov-Dec

Note. Although *M. sheathiana* is kept separate here from *M. pauperiflora* (no 68) (note differences in leaves and calyx) it may prove to be conspecific. Diels and Pritzel (1904) considered it to be very close, while Black (1965) considered it was conspecific. See also Cheel (1919) and Carrick and Chorney (1979).



65 ***M. sheathiana***  
Boree

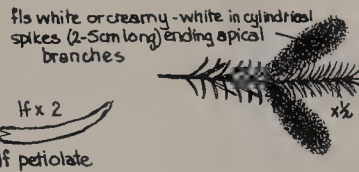
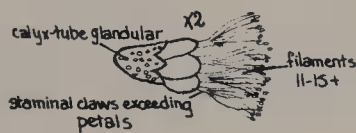
- E. Leaves 4-6 mm long.

- F. Leaves spreading and recurved, rather thick, obtuse; flowering spikes large; calyx-tube glandular.

Habit: Glabrous spreading shrub up to 2 m high.

Distribn: Da (Moore R.), Ey (C) (Mt Ragged), Le (Watheroo), St (Stirling Ra.), St (C), Wa (s c) (Nornalup).

Flg: Sept-Nov



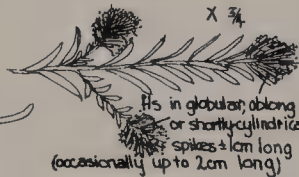
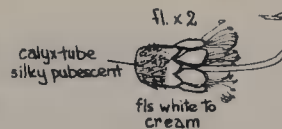
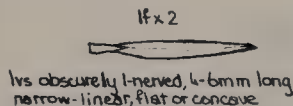
66 ***M. microphylla***

- F. Leaves very slender, acute; flowering spikes small; calyx-tube hairy.

Habit: Shrub up to 1.5 m high.

Distribn: Ey (Ravensthorpe), Ey (C) (Fitzgerald R., Esperance area), St (Stirling Ra.).

Flg: Aug-Nov



67 ***M. tenella***

- D. Leaves 6-12 mm long.

- E. Leaves petiolate; flowers small, few in head.



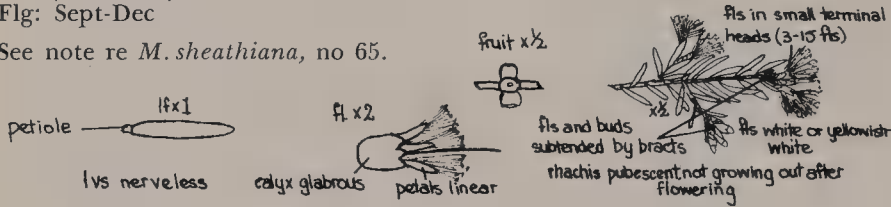
- F. Leaves narrow-linear to terete, obtuse,  
± spreading, 6-9 mm long.

Habit: Shrub or small tree 2-5 m high, with  
greyish loose papery bark.

Distribn: Co (Gnarlbine, L. Bidby), Ey  
(Ravensthorpe), Ey (C) (Fitzgerald R.),  
St (Kondinin).

Flg: Sept-Dec

See note re *M. sheathiana*, no 65.



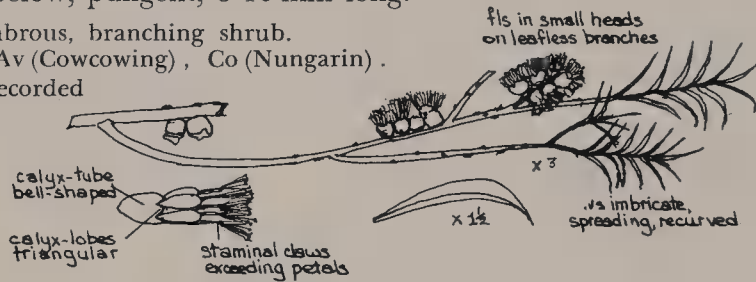
68 ***M. pauperiflora***

- F. Leaves oblong-subulate, concave above,  
rounded below, pungent, 6-10 mm long.

Habit: Glabrous, branching shrub.

Distribn: Av (Cowcowing), Co (Nungarin).

Flg: Not recorded



69 ***M. concava***

- E. Leaves sessile; flowers numerous in the head.

- F. Flowers in terminal globular heads.

Habit: Rhachis tomentose; leaves 8-12 mm  
long.

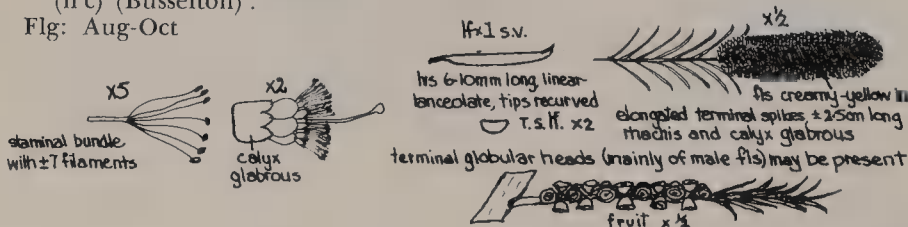
59 ***M. acerosa***  
(see p. 123)

- F. Flowers (perfect ones, male and female)  
in oblong-cylindrical spikes.

Habit: Shrub up to 2 m high, growing in  
swampy soil.

Distribn: Da (C) (Bayswater), Ir (Coorow), Ir  
(C) (Geraldton, Kalbarri), St (Wagin), Wa  
(n c) (Busselton).

Flg: Aug-Oct



70 ***M. viminea***

Leaves rather broader; flowers larger.

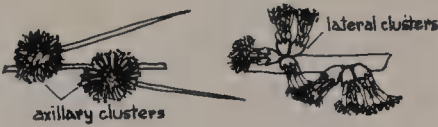
Distribn: Ir (C) (Geraldton).

70a ***M. viminea***  
var. ***major***



Section 5

A. Flower-heads axillary or lateral.



Page

B. Flower-heads in clusters.

Subsection 1

B. Flowers solitary or few and distant.



Subsection 2 129

A. Flower-heads in elongated spikes, not terminal.



Subsection 3 131

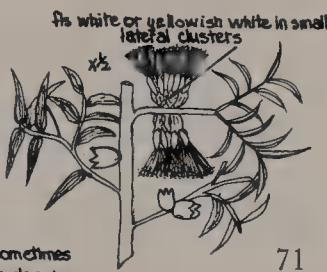
Subsection 1

A. Leaves acute or pungent-pointed.

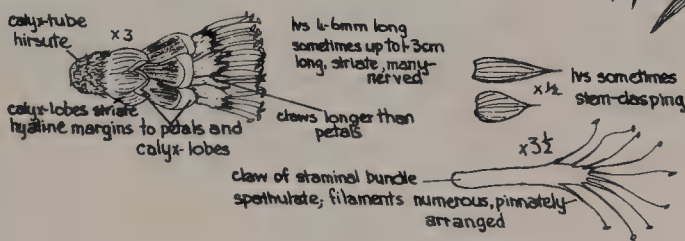
B. Leaves flat.

C. Leaves cordate-lanceolate to cordate-ovate.

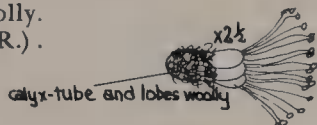
Habit: Tangling shrub 1-3 m high.  
Distribn: An, Av (Cowcowing), Co (Bruce Rock),  
Da (C) (Yanchep), Ey (Ravensthorpe, Grass  
Patch), Ir (Coorow), Ir (C) (Geraldton, Kal-  
barri), Le (Watheroo).  
Flg: Aug-Nov



71 **M. cardiophylla**  
Tangling  
Melaleuca



Flowers smaller than type species; calyx woolly.  
Distribn: Ir (Mingenew), Ir (C) (Murchison R.).



71a **M. cardiophylla**  
var. **parviflora**

Staminal bundles  $\pm$  2 cm long; claws much longer than the petals.  
Distribn: Ir (C) (Kalbarri).

9 **M. cardiophylla**  
var. **longistaminea**  
(see p. 106)

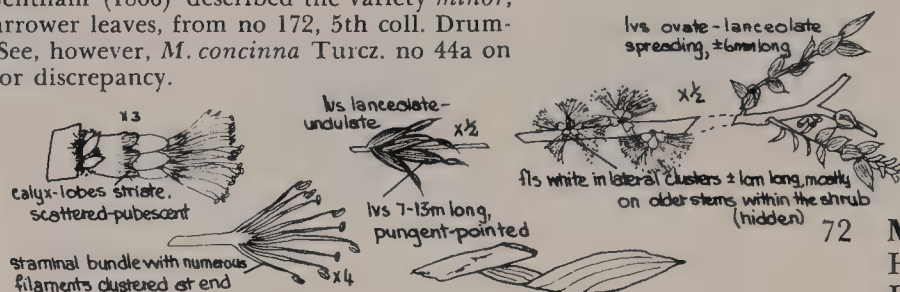
C. Leaves lanceolate or ovate-lanceolate, undulate, spreading.

Habit: Spreading, rigid shrub up to 2 m high.

Distribn: Av (Wongan Hills), Ey (Salmon Gums, Ravensthorpe), Ey (C) (Bremer Bay, Cape Arid), Ir (Mingenew), St (Ongerup).

Flg: Sept-Dec

Note. Bentham (1866) described the variety *minor*, with narrower leaves, from no 172, 5th coll. Drummond. See, however, *M. concinna* Turcz. no 44a on p. 117 for discrepancy.



72 ***M. undulata***  
Hidden  
Honey-myrtle

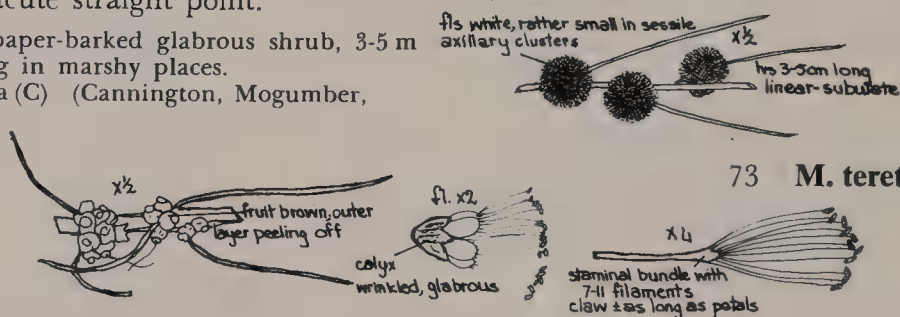
B. Leaves ± terete, 3-5 cm long; flowers mostly in axillary clusters, sometimes lateral.

C. Leaves with acute straight point.

Habit: Erect, paper-barked glabrous shrub, 3-5 m high, growing in marshy places.

Distribn: Da-Da (C) (Cannington, Mogumber, Bunbury).

Flg: Nov-Jan



73 ***M. teretifolia***

C. Leaves with hooked, ± pungent tip.



60 ***M. uncinata***  
(see p. 123)

A. Leaves not pungent-pointed, although sometimes acute.

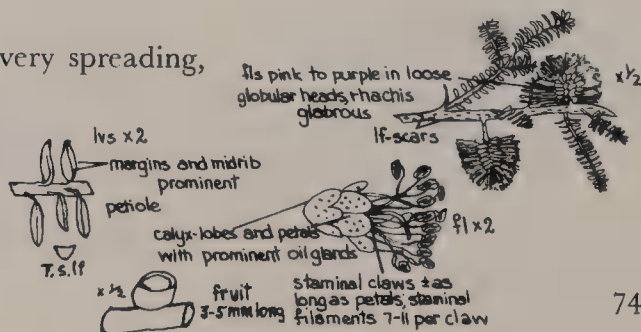
B. Leaves flat.

C. Leaves ovate, obtuse, very spreading, 2-4 mm long.

Habit: Bushy glabrous shrub up to 2 m high.

Distribn: Ey (L. King), St (Porongurup Ra., Ongerup), St (C).

Flg: Sept-Jan



74 ***M. depauperata***

C. Leaves obovate to lanceolate.

D. Leaves 2-5 cm long.

Habit: Rigid plant with softly-hairy shoots.

Leaves obovate-oblong, leathery 3-nerved;  
fruits lateral, sessile, globular.

Distribn: St (C).

Flg: Not recorded

D. Leaves 4-8 mm long.

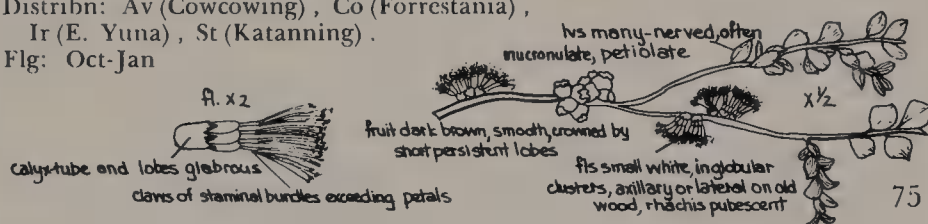
74a ***M. baxteri***

Habit: Shrub 1-3 m high.

Distribn: Av (Cowcowing), Co (Forrestania),

Ir (E. Yuna), St (Katanning).

Flg: Oct-Jan



75 ***M. lateriflora***

Leaves broadly elliptical-oblong, 8-12 mm long.



75a ***M. lateriflora*  
var. *elliptica***

Leaves oblong-lanceolate or slightly cuneate,  
acute.

Distribn: Da (Canning R.), Ir (C) (Kalbarri),  
Le (C) (Jurien Bay), Wa (Ludlow).



75b ***M. lateriflora*  
var. *acutifolia***

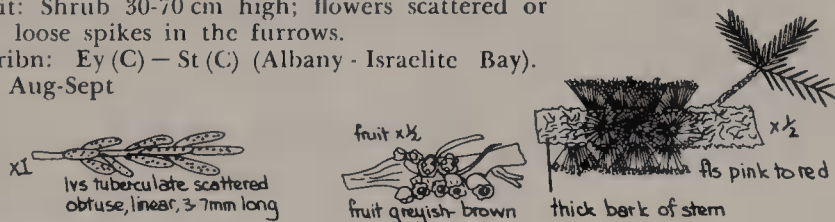
B. Leaves linear, semi-terete.

C. Flowers pink to red, immersed in the fissures  
of the corky bark.

Habit: Shrub 30-70 cm high; flowers scattered or  
in loose spikes in the furrows.

Distribn: Ey (C) - St (C) (Albany - Israelite Bay).

Flg: Aug-Sept



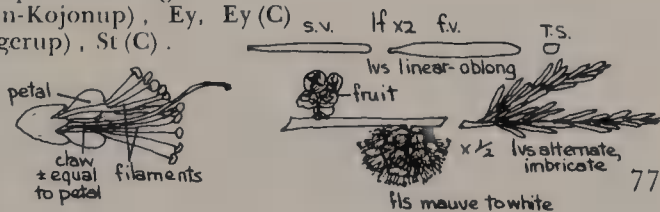
76 ***M. suberosa***  
Corky  
Honey-myrtle

C. Flowers  $\pm$  white; branches not corky.

Habit: Glabrous shrub up to 1 m high.

Distribn: Da (Bridgetown-Kojonup), Ey, Ey (C)  
(Bremer Bay), St (Ongerup), St (C).

Flg: Sept-Oct



77 ***M. bracteosa***

## Subsection 2

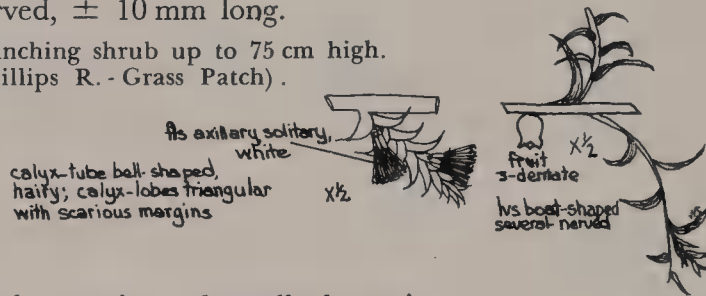
A. Leaves 6-13 mm long.

- B. Apical leaves imbricate, rigid, ovate, very pungent, recurved,  $\pm$  10 mm long.

Habit: Low, branching shrub up to 75 cm high.

Distribn: Ey (Phillips R. - Grass Patch).

Flg: Aug-Sept



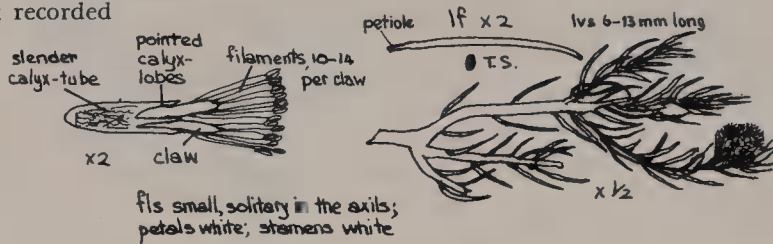
78 *M. cliffortioides*

- B. Leaves scattered, conspicuously stalked, semi-cylindrical, linear, nerveless,  $\pm$  blunt.

Habit: Glabrous shrub.

Distribn: Ey (Mt Ragged).

Flg: Not recorded



79 *M. seorsiflora*

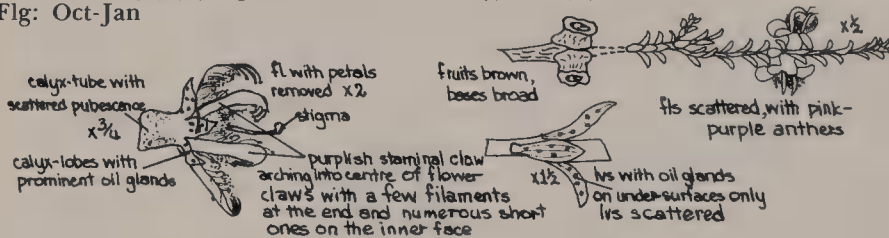
- A. Leaves short, up to 5 mm long.

- B. Leaves ovate to oblong, spreading, obtuse, 3-4 mm long.

Habit: Small spreading shrub up to 1 m high.

Distribn: Ey (C) (Hopetoun - Israelite Bay), St (C).

Flg: Oct-Jan



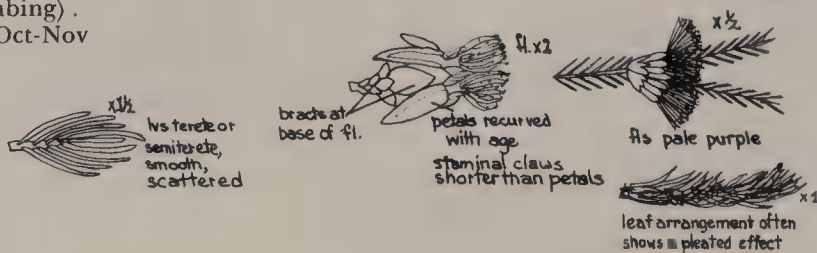
80 *M. pulchella*  
Claw  
Honey-myrtle

- B. Leaves linear or semi-terete, erect, up to 4 mm long.

Habit: Small densely-branched shrub 50 cm-1 m high.

Distribn: Ey (L. King, Hamersley R.), St (L. Grace, Nyabing).

Flg: Oct-Nov



81 *M. conferta*

## Subsection 3

A. Leaves ovate, narrow or broad-oblong to lanceolate.

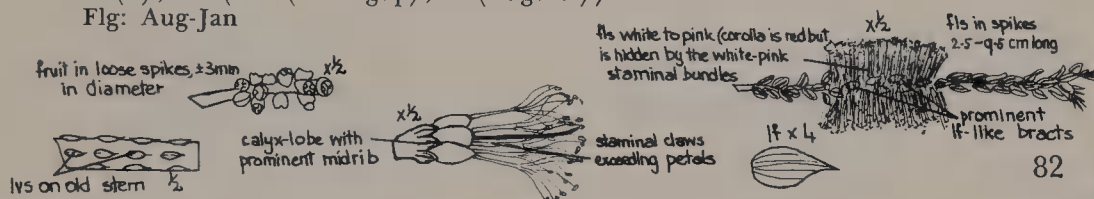
B. Leaves ovate.

C. Leaves 2-3 mm long, ovate or  $\pm$  triangular-shaped, acuminate; spikes long.

Habit: Shrub up to 4 m high; grows on coastal limestone.

Distribn: Da (C) (Yanchep), Ir (C) (Geraldton), Le (C), Wa (w c (Yallingup), s c (Augusta)).

Flg: Aug-Jan



82

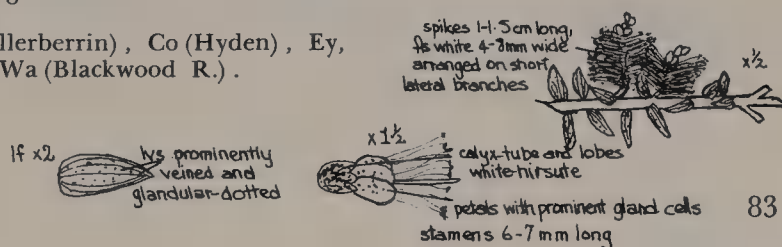
**M. huegelii**  
Chenille  
Honey-myrtle

C. Leaves 7-10 mm long, broad ovate, base  $\pm$  cordate, tip acute; spikes short.

Habit: Branching shrub with abundant, alternate, widely-spreading leaves which are sometimes stem-clasping.

Distribn: Av (Kellerberrin), Co (Hyden), Ey, St (Ongerup), Wa (Blackwood R.).

Flg: Sept-Oct



83

**M. spicigera**

B. Leaves linear-oblong to linear-lanceolate.

C. Trees or shrubs with rough not papery bark.

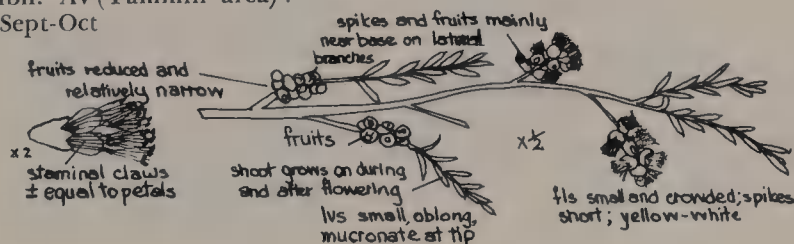
D. Bark grey, peeling off in layers.

E. Spikes short (7-10 mm long), flowers small and crowded; leaves 4-7 mm long.

Habit: Strongly-branched shrub.

Distribn: Av (Tammin area).

Flg: Sept-Oct



84

**M. arenicola**

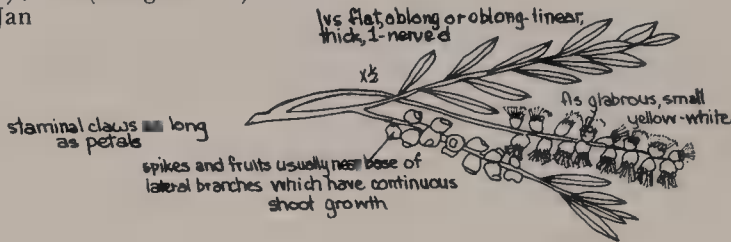


- E. Spikes long (up to 3 cm), loose to fairly dense; leaves 1.2-1.5 cm long.

Habit: Shrub 2-3 m high.

Distribn: Co (Gnarlbine), Da (Bullsbrook), Ey,  
Ey (C) (Esperance), Ir, Ir (C) (Murchison R.),  
St, St (C), Wa (Margaret R.).

Flg: Oct-Jan



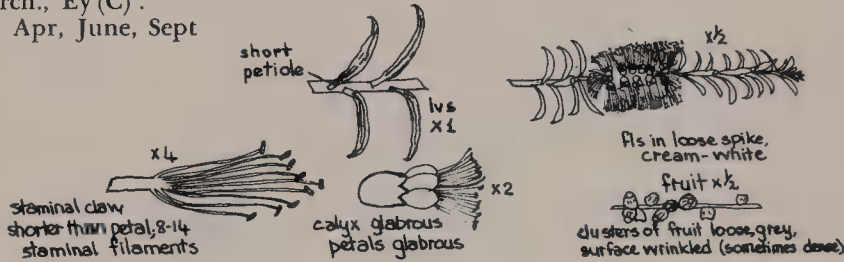
85 *M. laxiflora*†

- D. Bark black, rough, fissured; spikes 1-5 cm long.

Habit: Shrub or tree.

Distribn: Garden I., Rottneest I., Recherche Arch., Ey (C).

Flg: Apr, June, Sept



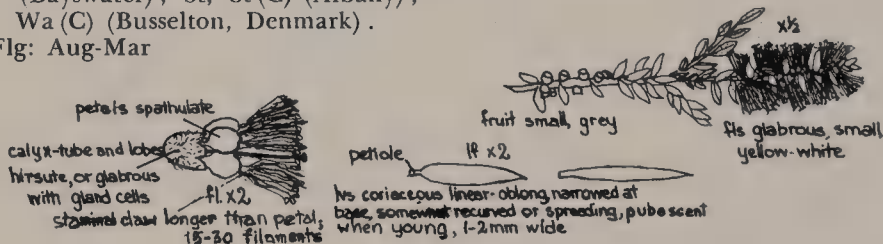
86 *M. lanceolata*†  
Rottneest  
Teatree

- C. Trees with whitish papery bark.

Habit: Paperbark tree up to 10 m high.

Distribn: Da (Gingin, Cookernup), Da (C)  
(Bayswater), St, St (C) (Albany),  
Wa (C) (Busselton, Denmark).

Flg: Aug-Mar



87 *M. preissiana*†

A. Leaves narrow-linear or terete.

B. Heads pink.

† See Blake 1968.

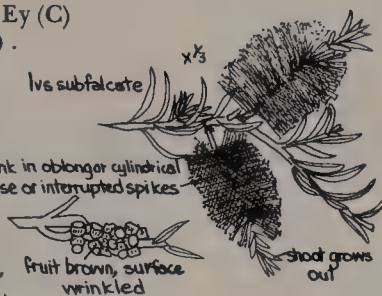
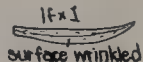
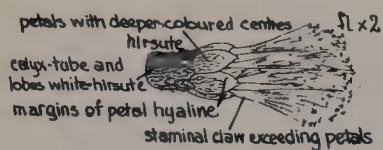


## C. Leaves 1.5-2 cm long, rigid and acute.

Habit: Spreading bushy shrub 1-2 m high.

Distribn: Ey (Ravensthorpe, Scaddan), Ey (C)  
(Bremer Bay, Esperance), St (Borden).

Flg: Nov-Feb

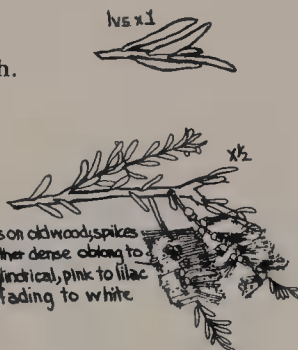
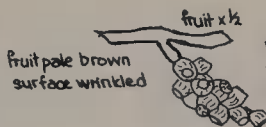
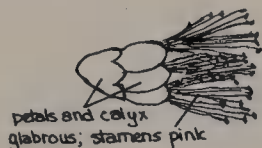
88 *M. subfalcata*

## C. Leaves mostly 4-8 mm long, ± appressed, ± obtuse, or sometimes mucronate.

Habit: Diffuse glabrous shrub up to 2.5 m high.

Distribn: Co (Bullabulling), Ey (Ravensthorpe, L. King), Ey (C) (Mt Barren, Esperance), St (Gnowangerup).

Flg: Sept-Dec

89 *M. glaberrima*

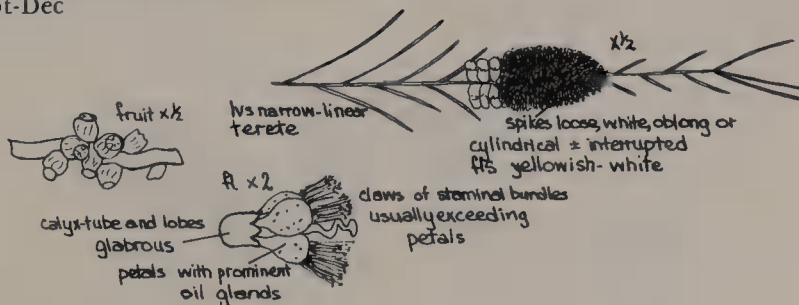
## B. Heads white, yellowish-white, or sometimes mauve.

## C. Tall shrub or tree up to 15 m high; bark deciduous in paper-like sheets; leaves 2-3 cm long.

Distribn: Widespread along rivers and swamps.

Av, Da, Da (C), Ey, Ey (C), Ir, Ir (C), Le, Le (C), St, St (C), Wa (C).

Flg: Sept-Dec

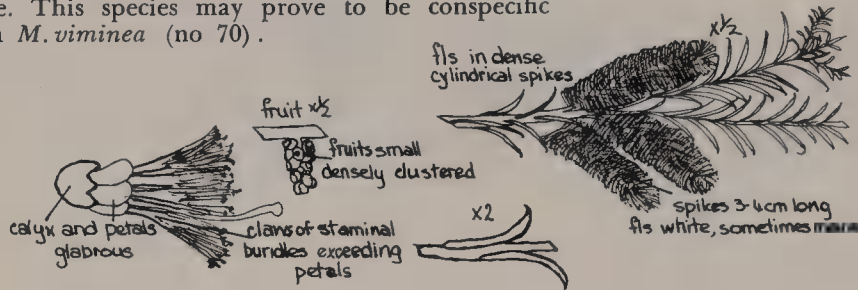
90 *M. raphiophylla*  
Swamp  
Paperbark

C. Shrub up to 4 m high; leaves  $\pm$  appressed, crowded, 5-15 mm long, with recurved point.

Distribn: Av, Da, Co, Ey, Ey (C),  
St (Stirling Ra.), St (C).

Flg: Oct-Dec

Note. This species may prove to be conspecific with *M. viminea* (no 70).



91 *M. hamulosa*

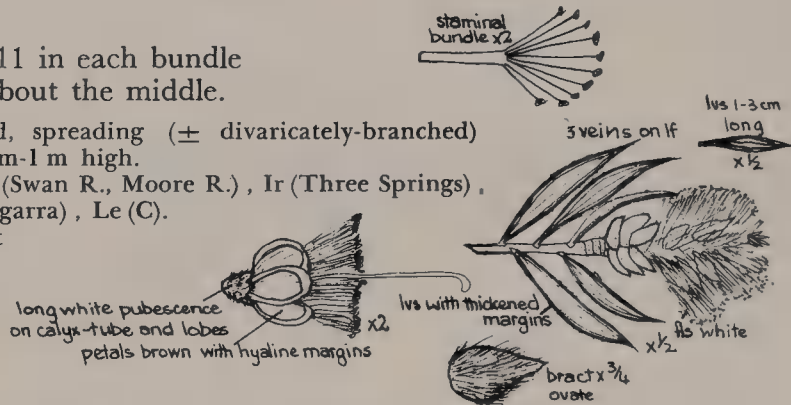
## 19 *Conothamnus*

A. Stamens 7-11 in each bundle united to about the middle.

Habit: Rigid, spreading ( $\pm$  divaricately-branched) shrub 15 cm-1 m high.

Distribn: Da (Swan R., Moore R.), Ir (Three Springs),  
Le (Badgingarra), Le (C).

Flg: Aug-Oct



1 *C. trinervis*

A. Stamens in 5 clusters of 3, but not united.

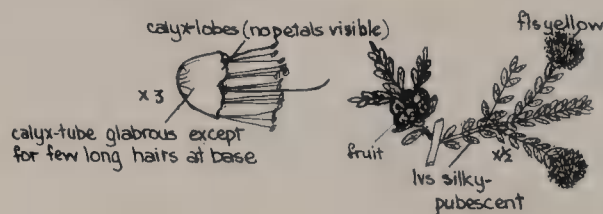
B. Petals either lacking or not normally discernible.

Habit: Densely-branched shrub 30 cm-1 m high.

Distribn: Ey (Ravensthorpe), Ey (C) (Bremer Bay-Esperance area).

Flg: July-Nov

Note. Diels & Pritzel (1904) considered that Bentham may have had abnormal flowers, without petals. However, in the material examined here petals were not seen. In some young flowers the calyx-lobes were petal-like.



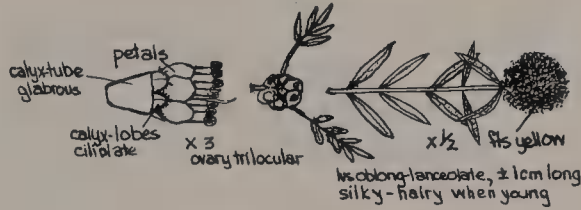
2 *C. aureus*

B. Petals present, 5.

Habit: Small shrub up to 40 cm high.

Distribn: St (Stirling Ra. - Porongurup Ra.), St (C).

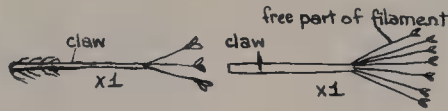
Flg: Aug-Oct



3 **C. neglectus**

20 *Beaufortia*

A. Staminal bundles over 1 cm long;  
claws much longer than the  
free parts of filaments.



(alternate A p. 138)

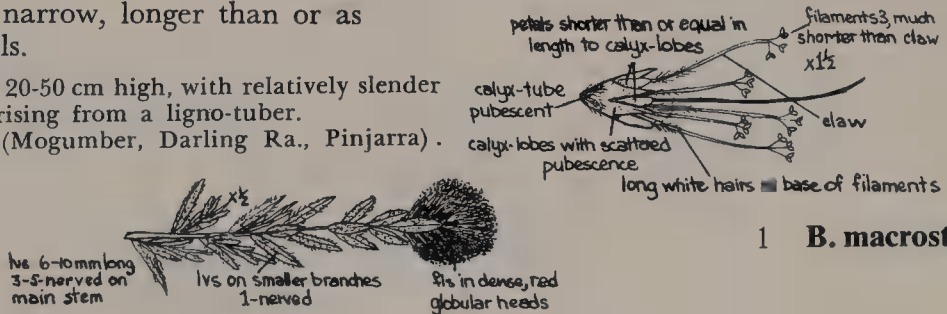
B. Leaves narrow-lanceolate or linear.

C. Calyx-lobes narrow, longer than or as  
long as petals.

Habit: Shrub 20-50 cm high, with relatively slender  
branches arising from a ligno-tuber.

Distribn: Da (Mogumber, Darling Ra., Pinjarra).

Flg: Oct-Jan



1 **B. macrostemon**

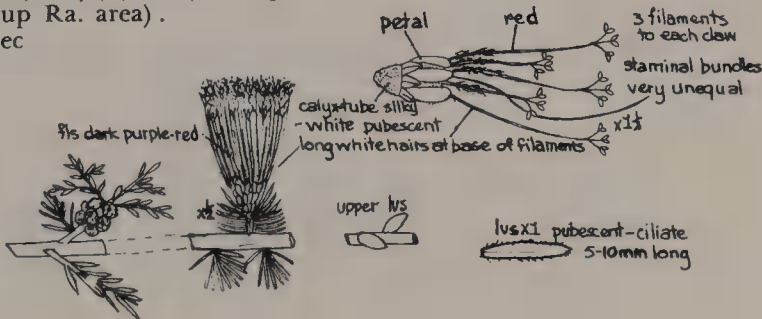
C. Calyx-lobes much shorter than petals.

D. Leaves green with scattered hairs.

Habit: Shrub 20 cm-1 m high, with crowded  
leaves.

Distribn: Co (Coolgardie area), Ey (Ravensthorpe,  
Mt Ragged), Ey (C), St (Stirling Ra.-  
Porongurup Ra. area).

Flg: Aug-Dec



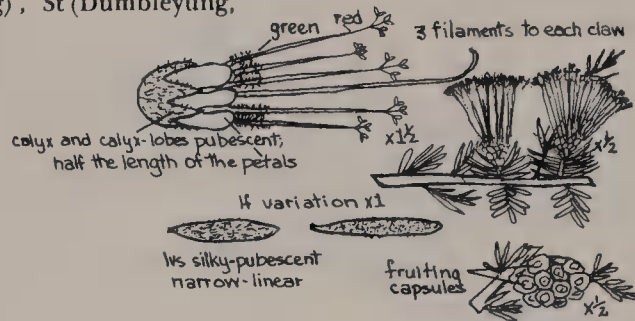
2 **B. heterophylla**  
Stirling Range  
Bottlebrush

## D. Leaves white-tomentose on both surfaces.

Habit: Rigidly-branched shrub 1-2 m high; no ligno-tuber present.

Distribn: Av (Tutanning), St (Dumbleyung, Katanning).

Flg: Sept-Dec



3 **B. incana**

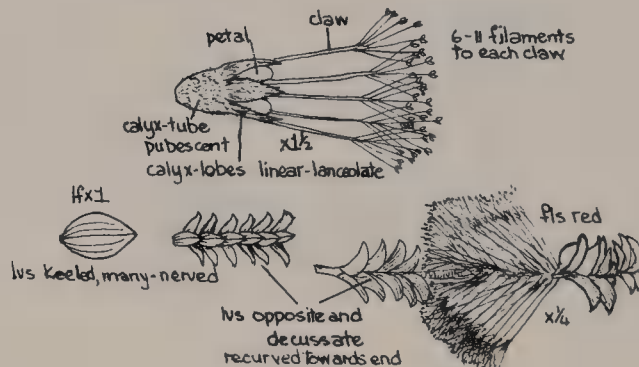
## B. Leaves ovate to orbicular, usually recurved or spreading.

## C. Petals shorter than calyx-lobes.

Habit: Shrub 1.5 m high, with rigid twiggy branches.

Distribn: St (Stirling Ra.), St (C), Wa (Manjimup), Wa (s c) (Nornalup).

Flg: Oct-Jan



4 **B. decussata**  
Gravel  
Bottlebrush

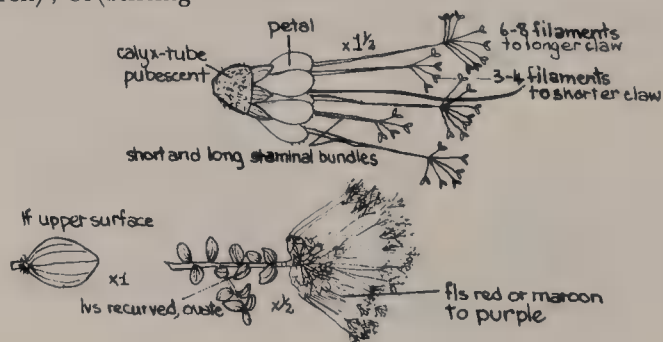
## C. Petals exceeding calyx-lobes.

## D. Staminal bundles very unequal.

Habit: Bushy shrub up to 1 m high.

Distribn: Ey (C) (Mt Barren), St (Stirling Ra. area), St (C).

Flg: Oct-Mar



5 **B. anisandra**

D. Staminal bundles equal.

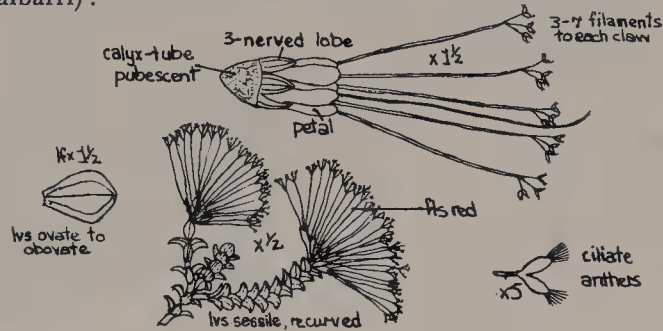
E. Leaves opposite.

F. Petals narrow; anthers ciliate.

Habit: Shrub up to 1.5 m high.

Distribn: An-Ir (Mullewa area), Av (Tamin), Co, Da (Mogumber), Ir (Three Springs), Ir (C) (Kalbarri).

Flg: Sept-Jan



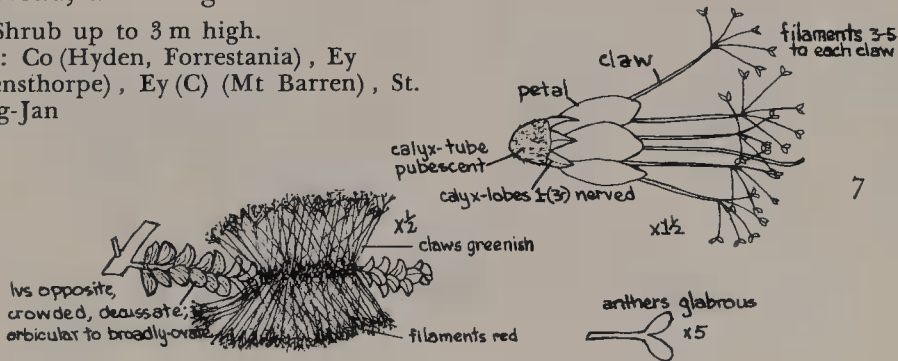
6 ***B. squarrosa***  
Sand-heath  
Bottlebrush

F. Petals broad, anthers glabrous.

Habit: Shrub up to 3 m high.

Distribn: Co (Hyden, Forrestania), Ey (Ravensthorpe), Ey (C) (Mt Barren), St.

Flg: Aug-Jan



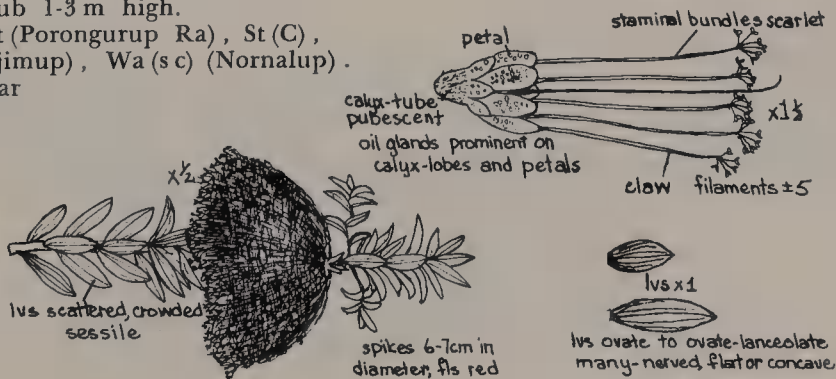
7 ***B. orbifolia***  
Ravensthorpe  
Bottlebrush

E. Leaves scattered, petals orbicular.

Habit: Shrub 1-3 m high.

Distribn: St (Porongurup Ra), St (C), Wa (Manjimup), Wa (s c) (Nornalup).

Flg: Jan-Mar



8 ***B. sparsa***  
Swamp  
Bottlebrush



A. Staminal bundles under 1 cm long; claws shorter than, or as long as the free part of filaments.

B. Leaves lanceolate, linear or 3-angled.

C. Branchlets, leaves and inflorescences with woolly-white spreading hairs.

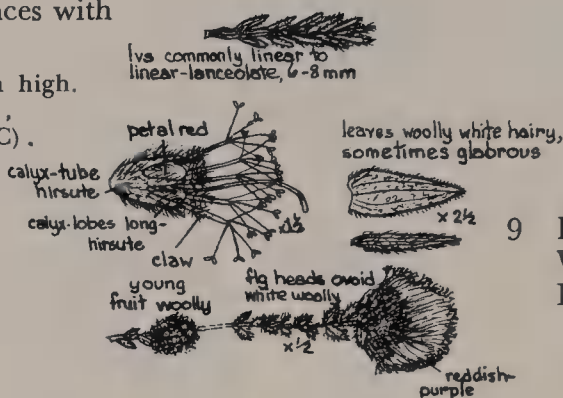
Habit: Spreading shrub up to 70 cm high.

Distribn: Av (Moora), Da (Moore R.),

Ir (Eneabba), Le (Watheroo), Le (C).

Flg: Sept-Dec

Before expansion the flower-heads form an ovoid woolly mass, with the black points of the bracteoles and calyx-segments protruding.



9 ***B. eriocephala***  
Woolly  
Bottlebrush

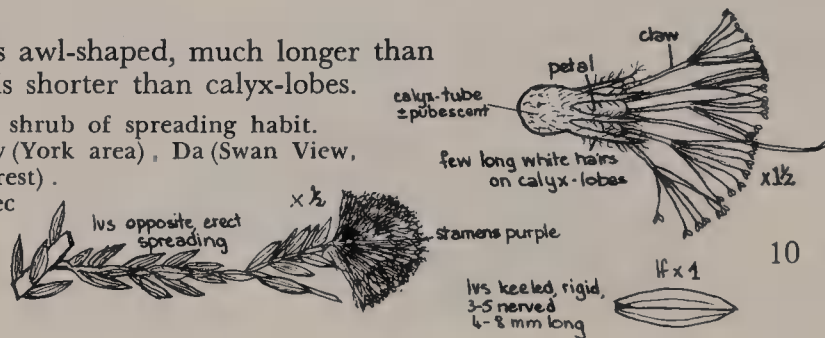
C. Branchlets and leaves  $\pm$  glabrous; inflorescences hairy, but not woolly-white.

D. Calyx-lobes awl-shaped, much longer than tube; petals shorter than calyx-lobes.

Habit: Low shrub of spreading habit.

Distribn: Av (York area), Da (Swan View, Glen Forrest).

Flg: Sept-Dec



10 ***B. purpurea***

D. Calyx-lobes triangular, shorter than tube; petals longer than calyx-lobes.

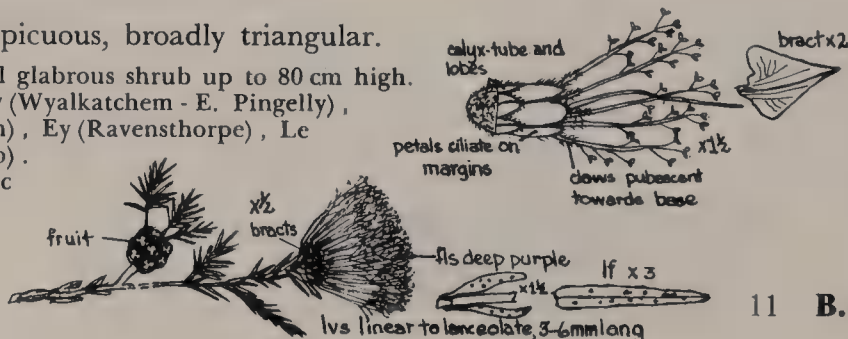
E. Bracts conspicuous, broadly triangular.

Habit: Small glabrous shrub up to 80 cm high.

Distribn: Av (Wyalkatchem - E. Pingelly),

Co (Hyden), Ey (Ravensthorpe), Le (Watheroo).

Flg: Aug-Dec



11 ***B. bracteosa***

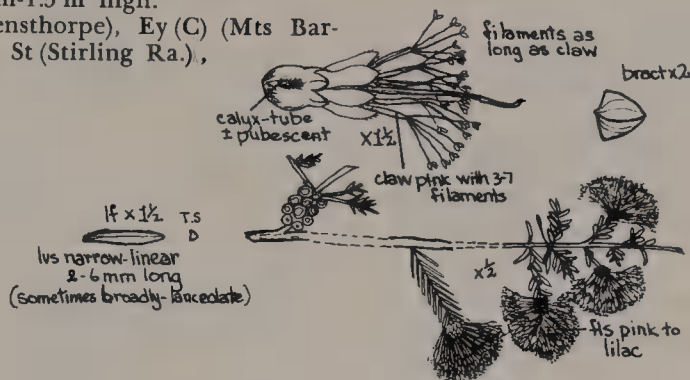


## E. Bracts very small, deciduous.

Habit: Shrub 30 cm-1.5 m high.

Distribn: Ey (Ravensthorpe), Ey (C) (Mts Barren, Esperance), St (Stirling Ra.), St (C).

Flg: Sept-Dec

12 **B. schaueri**  
Pink  
Bottlebrush

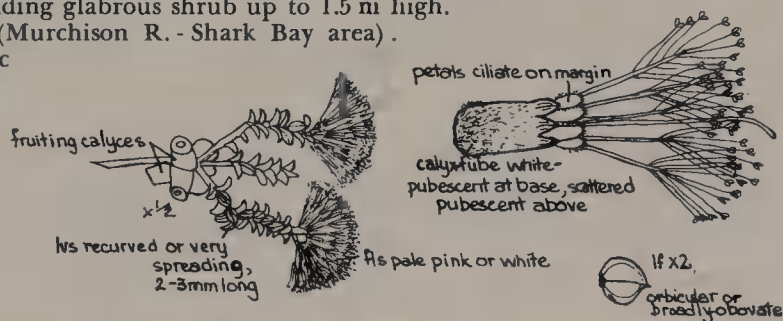
## B. Leaves ovate, obovate or orbicular.

## C. Stamens 9-15 in each bundle.

Habit: Spreading glabrous shrub up to 1.5 m high.

Distribn: Ir (Murchison R. - Shark Bay area).

Flg: Sept-Dec

13 **B. dampieri**

## C. Stamens 3-7 in each bundle.

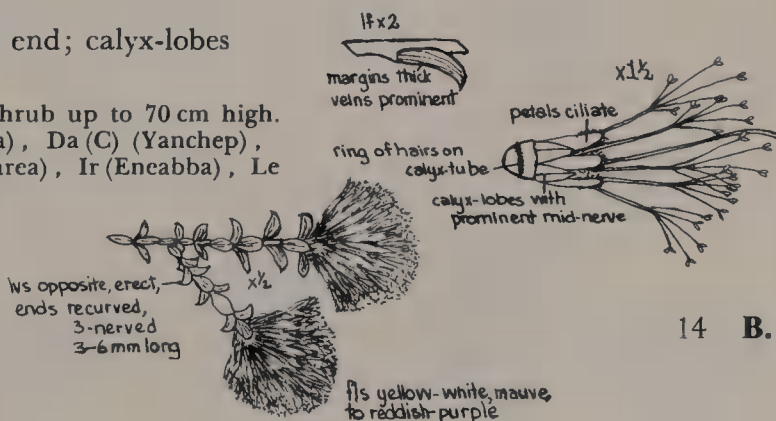
## D. Leaves 2-6 mm long; stamens 5-7 in each bundle.

E. Leaves recurved at end; calyx-lobes  $\pm$  as long as tube.

Habit: Rigid bushy shrub up to 70 cm high.

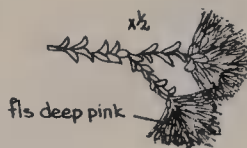
Distribn: Da (Muchea), Da (C) (Yanchep), Ey (C) (Esperance area), Ir (Encabba), Le (Badgingarra).

Flg: Oct-Jan

14 **B. elegans**

Leaves mostly  $\pm$  2 mm long; flowers smaller than in species, deep pink, mostly in globular heads.

Distribn: Da (C) (L. Pinjar), Ey (C) (Mts Barren), Ir (Walkaway), Le (Watheroo), St (C).



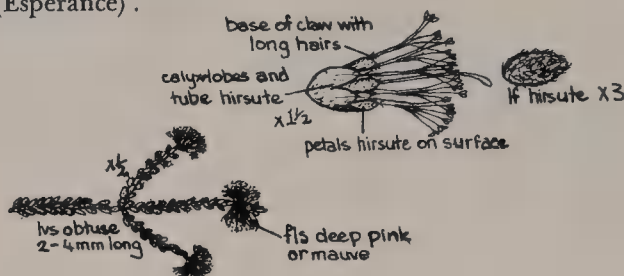
14a ***B. elegans***  
**var. minor**

E. Leaves obtuse, spreading but not recurved at end; calyx-lobes longer than calyx-tube.

Habit: Erect shrub up to 1 m high.

Distribn: An-Ir (Latham), Av (Tammin), Co (Wialki), Ey (C) (Esperance).

Flg: Oct-Dec



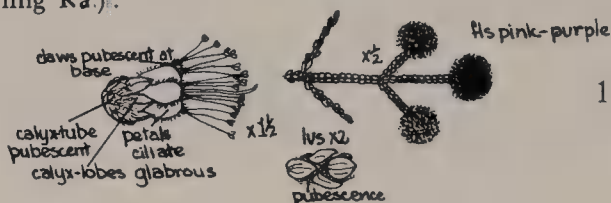
15 ***B. interstans***

D. Leaves 1-2 mm long, closely appressed (except for varieties 16a and 16b); stamens 3 (rarely 4-5) in each bundle.

Habit: Shrub up to 30 cm high, with very small leaves.

Distribn: Av (Tammin), Co (Merredin, Hyden), Ey (Jerramungup), St (Stirling Ra.).

Flg: Oct-Dec



16 ***B. micrantha***  
Little  
Bottlebrush

Leaves narrower, longer (up to 6 mm) and not appressed but spreading.

Distribn: Ey (Jerramungup), Ey (C) (Hope-toun, Esperance), St (Cranbrook).

Flg: Nov-Apr

Note. Earlier this taxon was named *B. empetrifolia* (Reichb.) Schau. It was reduced to a var. of *B. micrantha* by Benth, but may prove worthy of restoration to specific rank.



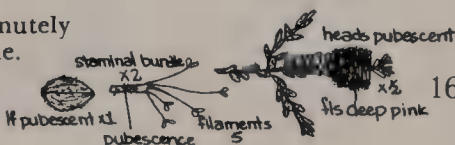
16a ***B. micrantha***  
**var. empetrifolia**

Leaves somewhat larger, imbricate, minutely pubescent; usually 5 stamens to a bundle.

Distribn: Av (Tutanning, Wyalkatchem),

Ey (Ravensthorpe), St (Dumbleyung).

Flg: Oct-Dec



16b ***B. micrantha***  
**var. puberula**

21 *Phymatocarpus*

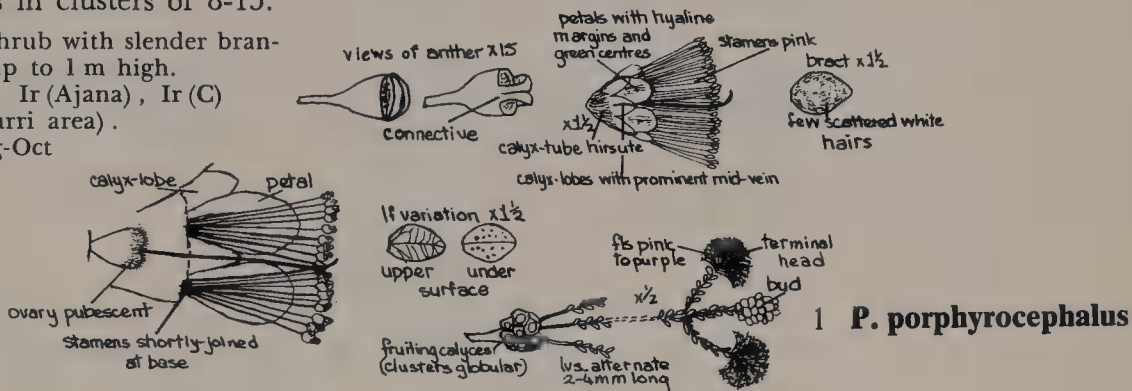
(See Verdon 1972)

## A. Stamens in clusters of 8-15.

Habit: Shrub with slender branches, up to 1 m high.

Distribn: Ir (Ajana), Ir (C) (Kalbarri area).

Flg: Aug-Oct

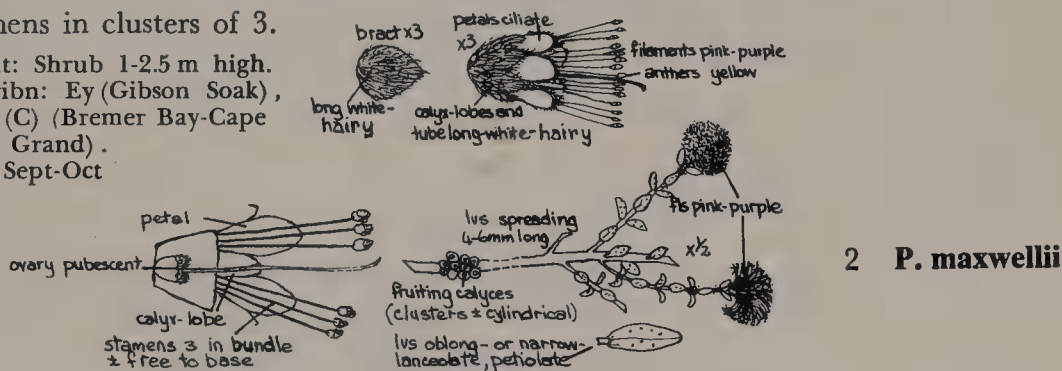


## A. Stamens in clusters of 3.

Habit: Shrub 1-2.5 m high.

Distribn: Ey (Gibson Soak), Ey (C) (Bremer Bay-Cape Le Grand).

Flg: Sept-Oct

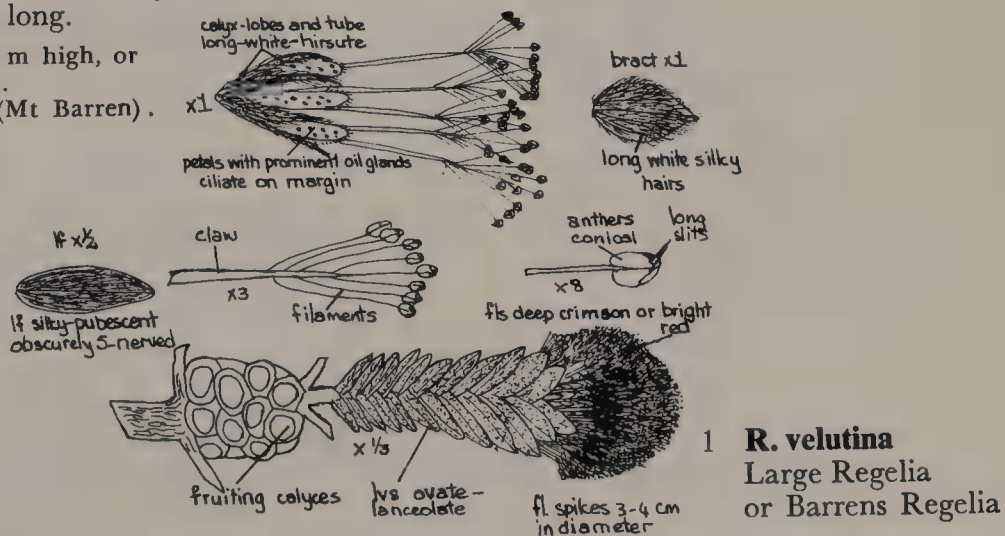
22 *Regelia*

## A. Staminal bundles 2 cm long; leaves 1-1.5 cm long.

Habit: Shrub 1-2 m high, or tree 5-6 m high.

Distribn: Ey (C) (Mt Barren).

Flg: Sept-Oct



A. Staminal bundles under 1 cm long; leaves up to 0.5 cm long.

B. Leaves broad, ovate, obovate-orbicular, erect or spreading.

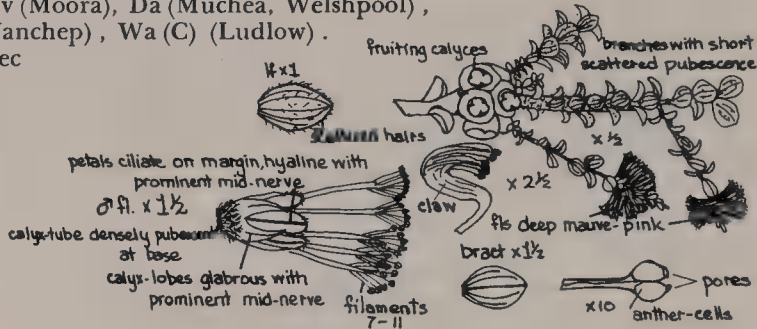
C. Leaves spreading; branches pubescent.

Habit: Dense shrub 1.5 m high.

Distribn: Av (Moora), Da (Muehea, Welshpool),

Da (C) (Yanchep), Wa (C) (Ludlow).

Flg: Aug-Dec



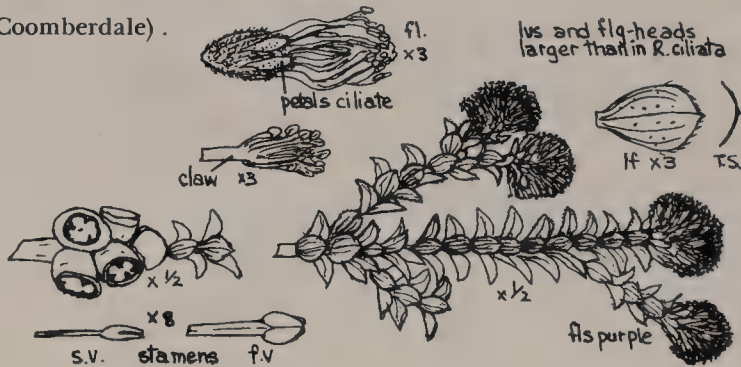
2 *R. ciliata*

C. Leaves erect or slightly spreading; branches glabrous.

Habit: Erect glabrous, densely-branched shrub 2-4 m high.

Distribn: Av (Coomberdale).

Flg: Dec



3 *R. megacephala*

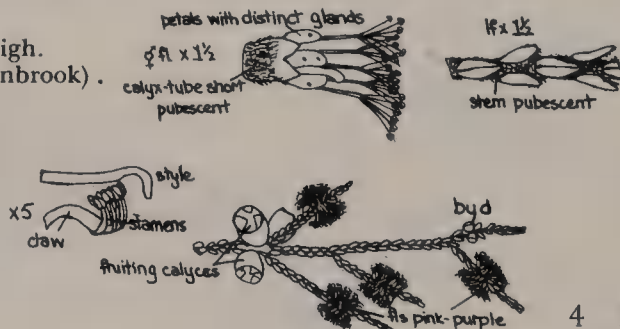
B. Leaves narrow, erect, peltately attached.

C. Calyx-lobes glabrous; leaves appressed against stem.

Habit: Dense shrub 1.5-2 m high.

Distribn: Co (Hyden), St (Cranbrook).

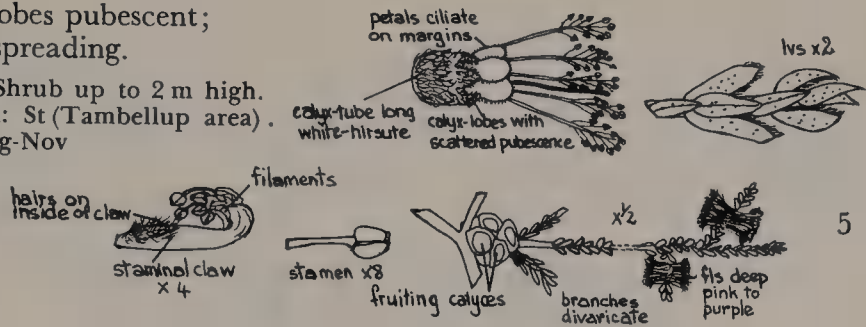
Flg: Sept-Dec (Mar)



4 *R. inops*

C. Calyx-lobes pubescent;  
leaves spreading.

Habit: Shrub up to 2 m high.  
Distribn: St (Tambellup area).  
Flg: Aug-Nov



5 *R. cymbifolia*

23 *Eremaea*

A. Flowers solitary.

(alternate A p. 125)

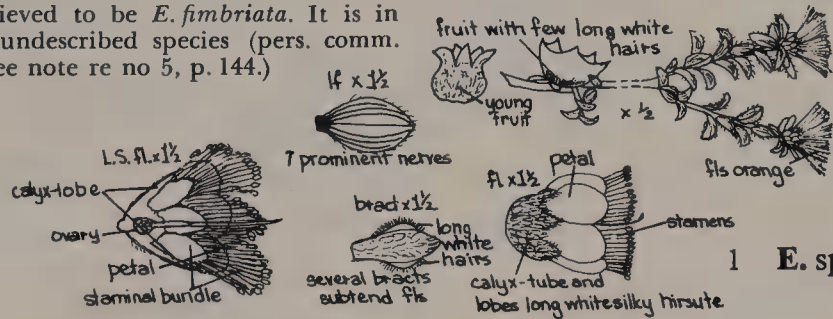
B. Flowers orange.

C. Leaves elliptical or ovate to obovate.

D. Leaves elliptical.

Habit: Rigid, many-stemmed shrub, 30-50 cm high.  
Distribn: Da (Gingin), Ir (Three Springs, Northampton), Le (Gillingarra).  
Flg: Aug-Oct

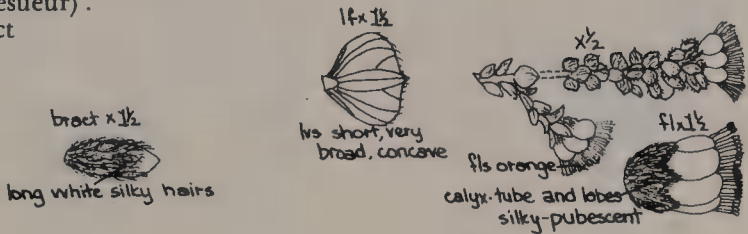
Note. The plant with the characters illustrated was earlier believed to be *E. fimbriata*. It is in fact an as yet undescribed species (pers. comm. A. S. George. See note re no 5, p. 144.)



1 *E. sp.*

D. Leaves ovate to obovate.

Habit: Dense shrub up to 1 m high.  
Distribn: Ir (Northampton), Ir (C) (Geraldton), Le (Mt Lesueur).  
Flg: Aug-Oct



1a *E. sp. var.*



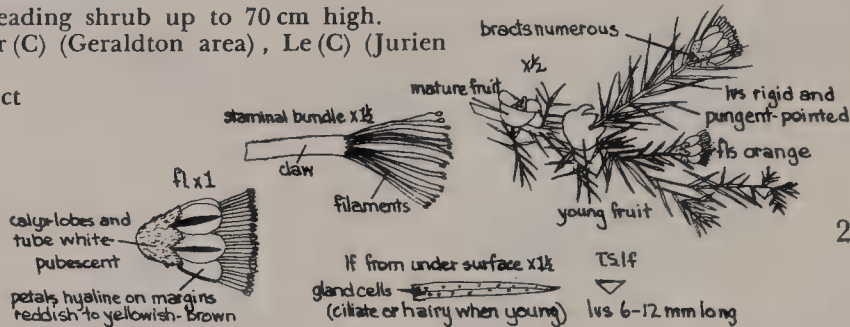
C. Leaves narrow-linear.

D. Stamens in bundles; claws  
as long as filaments.

Habit: Spreading shrub up to 70 cm high.

Distribn: Ir (C) (Geraldton area), Le (C) (Jurien Bay).

Flg: Aug-Oct



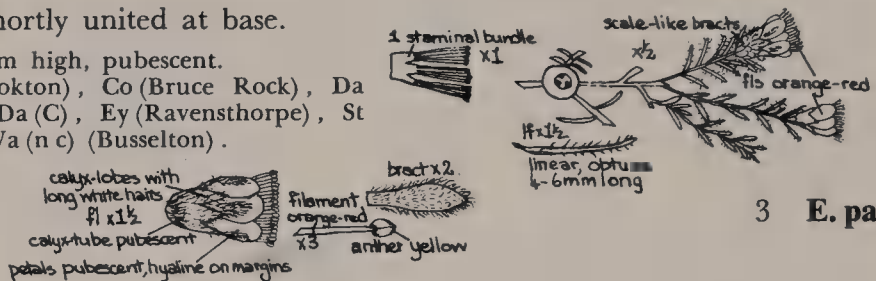
2 ***E. acutifolia***  
Rusty  
*Eremaea*

D. Stamens only shortly united at base.

Habit: Shrub 1.5 m high, pubescent.

Distribn: Av (Brookton), Co (Bruce Rock), Da (Perth area), Da (C), Ey (Ravensthorpe), St (Cranbrook), Wa (n c) (Busselton).

Flg: Aug-Nov



3 ***E. pauciflora***

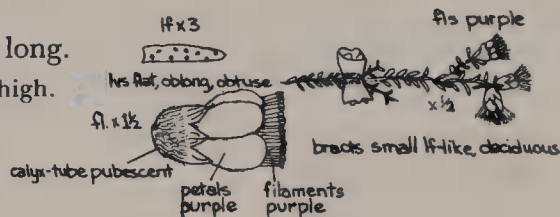
B. Flowers pink or purple.

C. Leaves glabrous, up to 3 mm long.

Habit: Erect shrub up to 30 cm high.

Distribn: Da (Mucnea-Gingin).

Flg: Dec-Feb



4 ***E. purpurea***

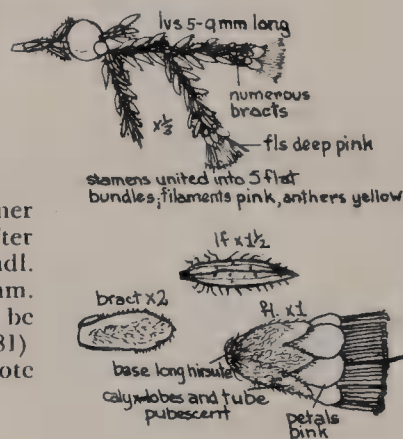
C. Leaves at least 5 mm long, with margins covered with soft spreading hairs.

Habit: Spreading shrub 30-50 cm high.

Distribn: Da (Maida Vale, Helena Valley), Le (Dandaragan), Le (C) (Jurien Bay).

Flg: Aug-Oct

Note. A plant described as *E. rosea* by Gardner and George (1964) has recently been found after examination of the type of *E. fimbriata* Lindl. at Kew to be actually that species (pers. comm. A. S. George). The plant which had come to be regarded as *E. fimbriata* (cf. F. Mueller 1878-81) is in fact an as yet undescribed species (see note p. 143).



5 ***E. fimbriata***



A. Flowers 2-5 in a head.

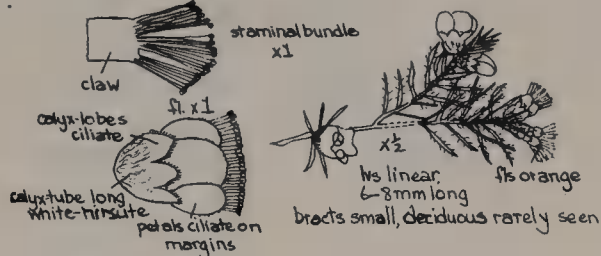
## B. Stamens in bundles, claws nearly as long as filaments.

Habit: Low bushy shrub up to 50 cm high.

Distribn: Ir (Northampton-Ajana area),

Ir (C) (Kalbarri area).

Flg: Sept-Feb

6 ***E. ebracteata***

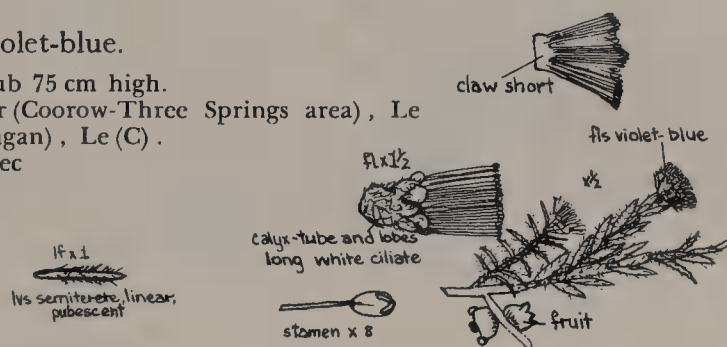
## B. Stamens only shortly united at base.

## C. Flowers violet-blue.

Habit: Shrub 75 cm high.

Distribn: Ir (Coorow-Three Springs area), Le (Dandaragan), Le (C).

Flg: Aug-Dec

7 ***E. violacea***  
Violet  
*Eremaea*

## C. Flowers orange.

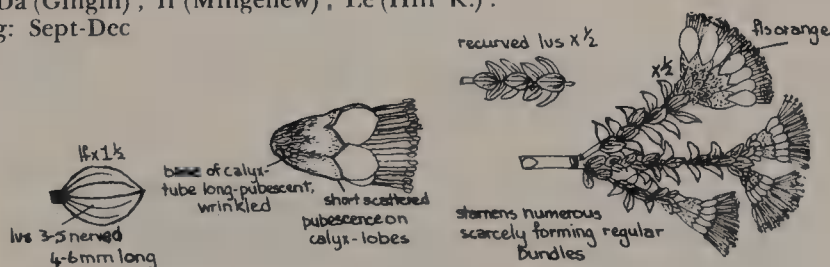
## D. Leaves ovate, spreading, recurved.

Habit: Shrub 1.5 m high.

Distribn: An-Ir (Morawa area), Av (Cowcowing),

Da (Gingin), Ir (Mingenew), Le (Hill R.).

Flg: Sept-Dec

8 ***E. beaufortioides***

## D. Leaves linear, spreading.

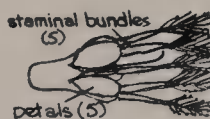
3 ***E. pauciflora***  
(see p. 144)

24 *Calothamnus*

(Note. Drawings of some staminal bundles diagrammatized for clarity.)

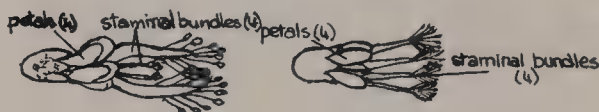
Page

- A.
- Flower parts in 5s; staminal bundles
- $\pm$
- equal.



Section 1

- A.
- Flower parts in 4s.



- B. Claws of the 2 upper staminal bundles broad and flat; those of the 2 lower ones narrow and short.

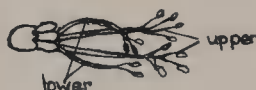


Section 2 148

- B. Claws of all 4 staminal bundles
- $\pm$
- equal in breadth and either equal in length or the lower ones shorter and less well developed, with fewer filaments.



Section 3 150



## Section 1

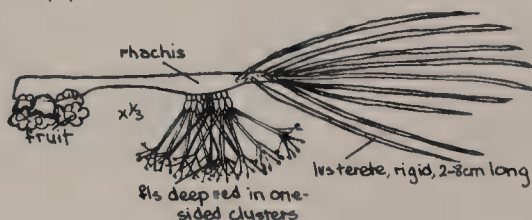
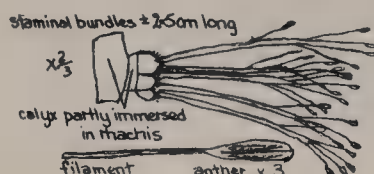
- A.
- Flowering calyx-tube
- $\pm$
- 2 mm long, immersed or partly immersed in the rhachis (stem axis).

- B. Calyx partly immersed in the rhachis when in flower.

Habit: Shrub up to 60 cm high, glabrous.

Distribn: Ey (Jerramungup), Ey (C) (Bremer Bay-Lucky Bay), St (Porongurup Ra.), St (C).

Flg: Sept-Dec

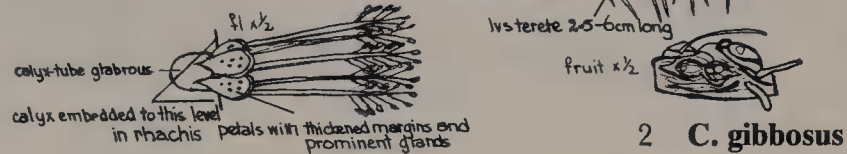
1 *C. gracilis*

B. Calyx completely immersed in the rhachis when in flower.

Habit: Shrub less than 50 cm high; branches thick and corky.

Distribn: Ey (Ravensthorpe), Ey (C) (Fitzgerald R., Esperance), St (Cranbrook, Ongerup).

Flg: Aug-Dec



2 *C. gibbosus*

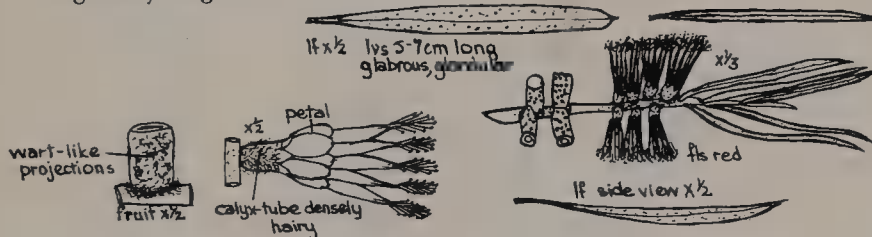
A. Flowering calyx-tube 4-6 mm long, not immersed in the rhachis when in flower.

B. Leaves flat, oblanceolate.

Habit: Dense bush up to 2 m high.

Distribn: Ir, Ir (C) (Geraldton-Kalbarri).

Flg: May-Aug



3 *C. blepharospermus*

Leaves smaller, narrower, glabrous.

Distribn: Ir-Le (C) (Yuna-Cockleshell Gully).

Flg: Jan

3a *C. blepharospermus*  
var. *glaber*

B. Leaves terete (or only slightly flattened).

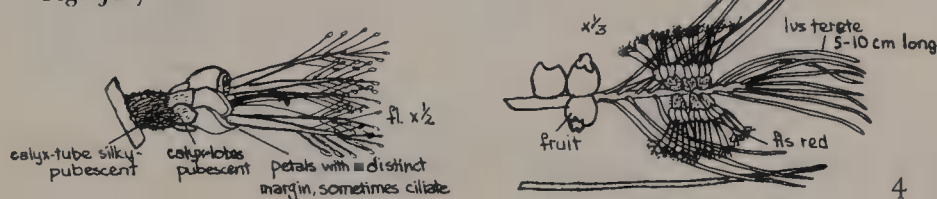
C. Leaves 5-12 cm long, rigid.

D. Calyx-tube silky-pubescent.

Habit: Erect shrub up to 2 m high, with  $\pm$  corky branches.

Distribn: An-Av (Sandstone-Wubin area), Co (Norseman), Ir (E. Yuna), Ir (C) (Kalbarri).

Flg: July-Nov



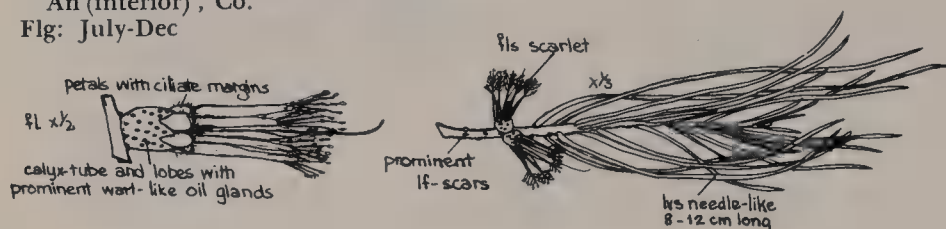
4 *C. chrysanthus*

## D. Calyx-tube warty.

Habit: Erect shrub up to 2 m high.

Distribn: An-Ir (Perenjori-Jibberding area),  
An (interior), Co.

Flg: July-Dec

5 ***C. gilesii***

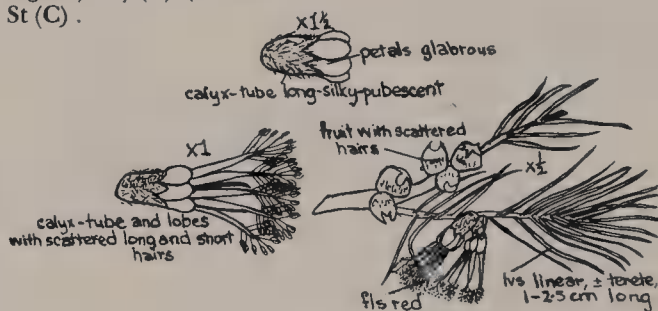
## C. Leaves under 5 cm long.

## D. Calyx-tube hairy.

Habit: Bushy shrub up to 1.5 m high.

Distribn: Da (Cannington), Ey (C) (E. Mt Barren,  
Lucky Bay), St, St (C).

Flg: July-Dec

6 ***C. villosus***Leaves less than 1 cm long; flowers smaller  
than in species.

Distribn: Da (Swan R.).

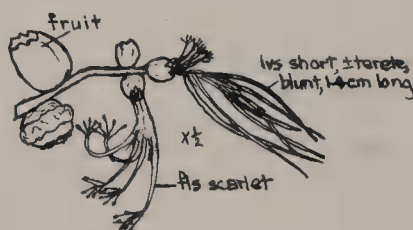
6a ***C. villosus***  
var. ***ericifolius***

## D. Calyx-tube glabrous.

Habit: Shrub up to 1.3 m high.

Distribn: Ir (Murchison R. area).

Flg: Sept-Oct

7 ***C. oldfieldii***

## Section 2

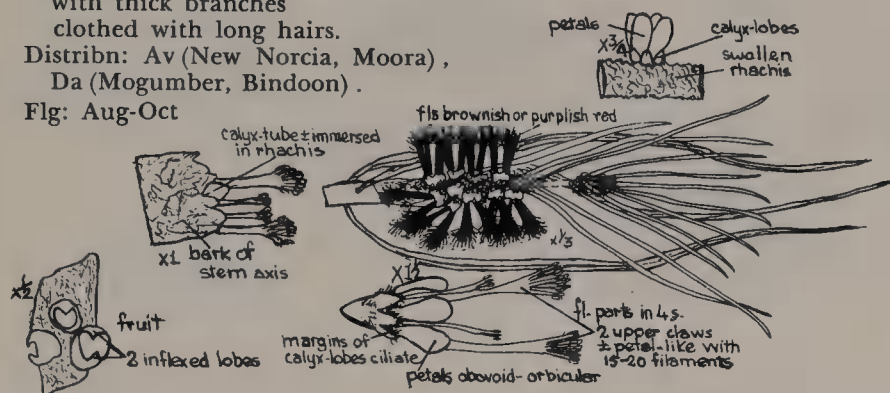
- A. Calyx ± completely immersed in the thick  
swollen rhachis (stem axis).

## B. Leaves flat, 10-15 cm long.

Habit: Shrub up to 1 m high,  
with thick branches  
clothed with long hairs.

Distribn: Av (New Norcia, Moora),  
Da (Mogumber, Bindoon).

Flg: Aug-Oct

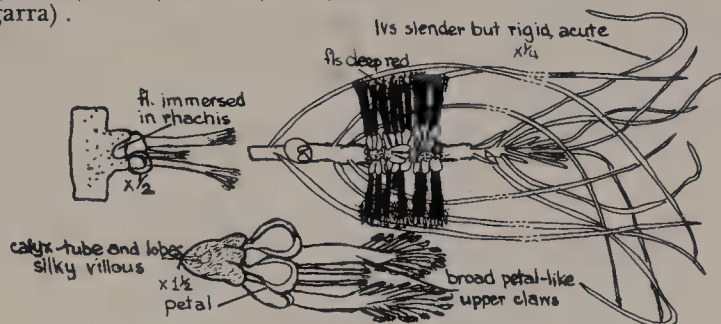
8 *C. pachystachyus*

## B. Leaves terete, 15-30 cm long.

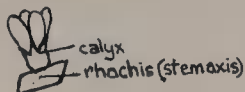
Habit: Shrub up to 1 m high with  
corky pubescent branches.

Distribn: Av (Moora), Da (Swan R.), Ir (Coorow),  
Le (Badgingarra).

Flg: Aug-Nov

9 *C. longissimus*

## A. Calyx not immersed in the rhachis.



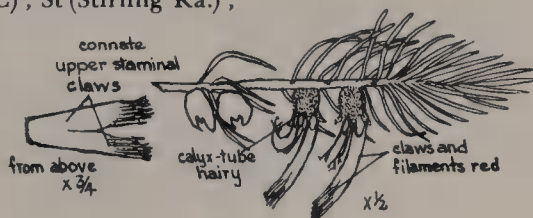
## B. Lower staminal claws with few or no filaments; the 2 upper staminal claws ± connate to top.

C. Leaves terete, acute, slender,  
1-4 cm long.

Habit: Low, spreading shrub up to 50 cm high.

Distribn: Av (Pingelly), Da-Da (C) (Perth area), Ir,  
Ir (C), Le (Eneabba), Le (C), St (Stirling Ra.),  
St (C), Wa (C).

Flg: July-Sept

10 *C. sanguineus*

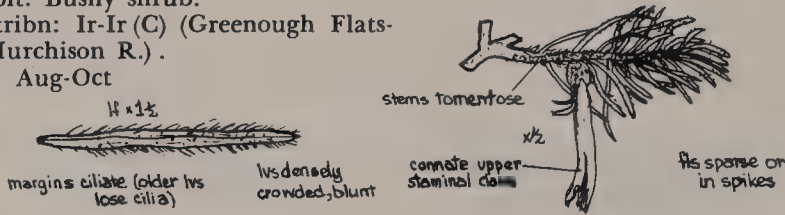


## C. Leaves flat, thick, linear, 1-2 cm long.

Habit: Bushy shrub.

Distribn: Ir-Ir (C) (Greenough Flats-Murchison R.).

Flg: Aug-Oct

11 *C. blepharanthus*

## B. Lower staminal claws with numerous filaments, the 2 upper only, connate or partly so at base.

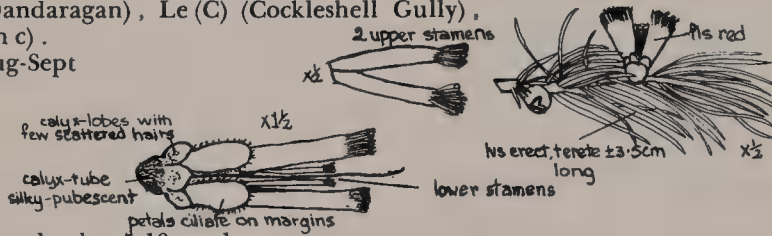
Habit: Small spreading shrub.

Distribn: Da (foot of Darling Ra.),

Le (Dandaragan), Le (C) (Cockleshell Gully),

Wa (n c).

Flg: Aug-Sept

12 *C. torulosus*

Leaves slender 5-10 cm long.

Distribn: Da (Collie).

Note. Regarded by C. A. Gardner as a distinct species (manuscript name *C. pinaster*). Not validated.12a *C. torulosus*  
var. *leptophylla*

## Section 3

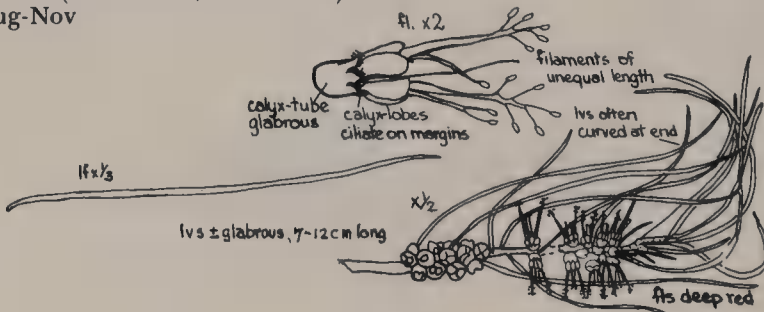
## A. Lower staminal bundles reduced in size and with only 1 or 2 filaments.

## B. Staminal bundles very unequal, the larger upper ones up to 2 cm long; leaves terete, up to 12 cm long.

Habit: Shrub with young shoots silky-hairy.

Distribn: St (Gordon R., Cranbrook).

Flg: Aug-Nov

13 *C. preissii*



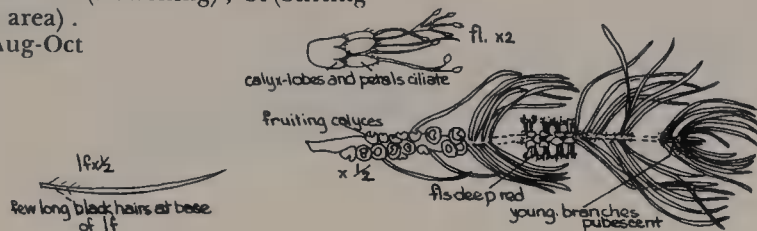
- B. Staminal bundles  $\pm$  equal, under 1 cm long, the lower ones reduced to a single stamen; leaves short (2-3 cm).

Habit: A low, branching shrub.

Distribn: Da (Bowelling), St (Stirling

Ra. area).

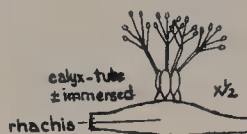
Flg: Aug-Oct



14 ***C. lehmannii***

- A. All staminal bundles with the same number of filaments.

- B. Flowering calyx-tube  $\pm$  immersed in the rhachis.



- C. Leaves oblanceolate, thick, rigid.

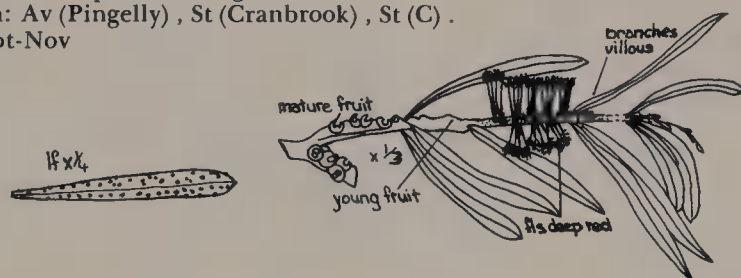


- D. Fruiting-calyx nearly immersed in swollen rhachis; stamens 2-3 cm long.

Habit: Shrub up to 1 m high.

Distribn: Av (Pingelly), St (Cranbrook), St (C).

Flg: Sept-Nov



15 ***C. planifolius***

Branches glabrous; leaves not as thick, but longer and more obtuse than in the species; stamens yellowish-green.

Distribn: St (L. Grace).

Flg: Oct

15a ***C. planifolius***  
**var. pallidifolius**

- D. Fruiting-calyx only partly immersed in the rhachis; stamens  $\pm$  3.5 cm long.

17b ***C. affinis***  
**var. longistamineus**  
(see no 17 p. 152)

- C. Leaves linear, narrow-linear or terete.

- D. Staminal bundles above 1 (1.5-3.5) cm long.

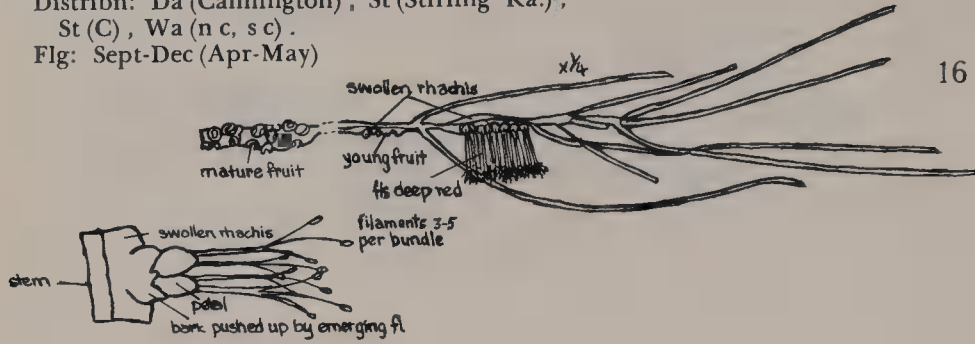
E. Leaves terete, 5-30 cm long.

Habit: Glabrous bushy shrub 50 cm-1 m high;

leaves up to 15 cm long.

Distribn: Da (Cannington), St (Stirling Ra.),  
St (C), Wa (n c, s c).

Flg: Sept-Dec (Apr-May)



16 **C. lateralis**

Leaves slender 15-30 cm long.

Distribn: Da, St, St (C).

16a **C. lateralis**  
forma **longifolius**

Leaves 5-10 cm long, more rigid than in the  
typical species.

16b **C. lateralis**  
forma **rigidus**

Leaves still more rigid; rhachis of spike  $\pm$   
9 cm long, with many flowers.

Distribn: Stirling Ra.

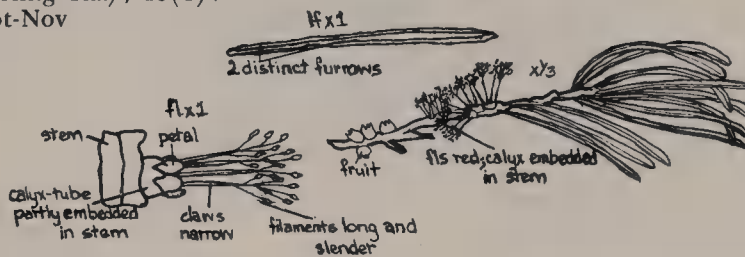
16c **C. lateralis**  
forma **crassus**

E. Leaves linear to narrow-linear, usually  
flat (terete in var. *teres*), 2-5 cm long.

Habit: A spreading shrub up to 1.3 m high.

Distribn: Av (Tutanning), Ey (C) (Lucky Bay),  
St (Stirling Ra.), St (C).

Flg: Sept-Nov



17 **C. affinis**

Leaves terete; spikes more  
continuous and calyx less  
immersed than in type species.

Distribn: Stirling Ra.



17a **C. affinis**  
var. **teres**

Leaves flat, 3 mm wide; stamens in bundles  
 $\pm$  3.5 cm long.

Distribn: St (Cranbrook).

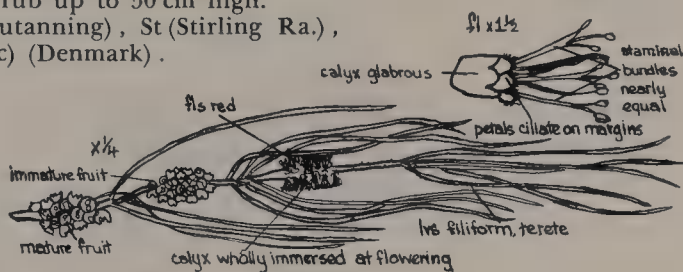
17b **C. affinis**  
var. **longistamineus**

- D. Staminal bundles under 1 cm long; leaves filiform, 10-20 cm long.

Habit: Small shrub up to 50 cm high.

Distribn: Av (Tutanning), St (Stirling Ra.), St (C), Wa (s c) (Denmark).

Flg: Aug-Oct



18 ***C. schaueri***

- B. Flowering calyx-tube exserted and free.

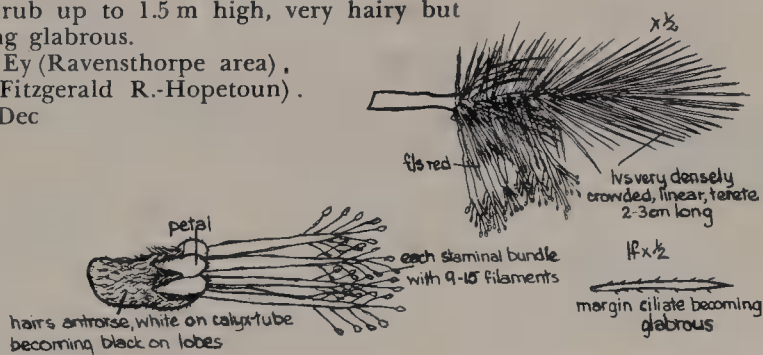
- C. Calyx very hirsute with long hairs.

- D. Flowers obscured by leaves; leaves mostly straight.

Habit: Shrub up to 1.5 m high, very hairy but becoming glabrous.

Distribn: Ey (Ravensthorpe area), Ey (C) (Fitzgerald R.-Hopetoun).

Flg: Aug-Dec



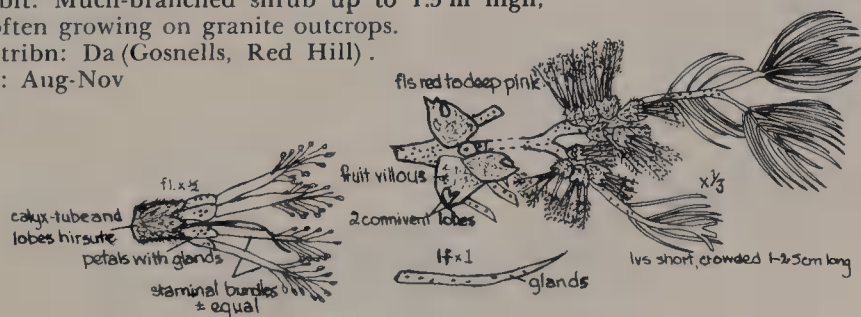
19 ***C. pinifolius***  
Dense  
Clawflower

- D. Flowers free of leaves; leaves incurved, linear-terete.

Habit: Much-branched shrub up to 1.5 m high, often growing on granite outcrops.

Distribn: Da (Gosnells, Red Hill).

Flg: Aug-Nov



20 ***C. rupestris***  
Cliff Net Bush  
or Mouse Ears

- C. Calyx glabrous or hoary-pubescent.

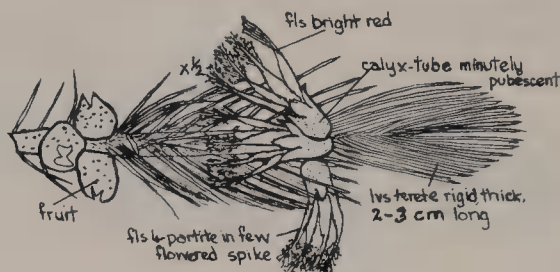
- D. Leaves narrow-linear to terete.

E. Calyx (tube and lobes)  $\pm$  1 cm long.

Habit: Shrub up to 1 m high.

Distribn: Ey (C) (Fitzgerald R., Mts Barren).

Flg: Sept-Nov



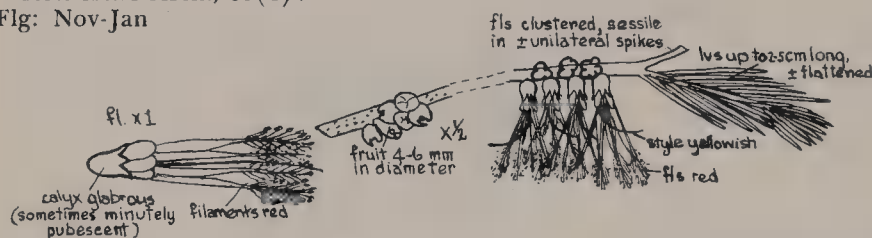
21 ***C. validus***  
Barrens  
Clawflower

E. Calyx  $\pm$  5 mm long; very variable plant.F. Leaves glabrous, slender,  $\pm$  flattened or terete, 1-3 (8) cm long.

Habit: An erect glabrous or slightly villous shrub 2-3 m high.

Distribn: Ey (C) (Mt Barren, Lucky Bay), Recherche Arch., St (C).

Flg: Nov-Jan



22 ***C. quadrifidus***  
One-sided  
Bottlebrush

Leaves slender, terete, sometimes up to 3 cm long.

Distribn: Da (Cottesloe).



22a ***C. quadrifidus***  
forma **acerosus**

Leaves thick, linear-clavate up to 8 cm long.

Distribn: Ir, Ir (C) (Murchison R.), Le, Le (C).



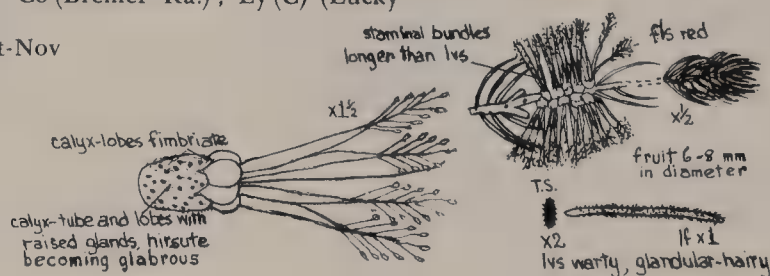
22b ***C. quadrifidus***  
forma **obtusius**

## F. Leaves scabrous, linear, flat, 1-2 cm long.

Habit: Spreading shrub up to 1.5 m high.

Distribn: Co (Bremer Ra.), Ey (C) (Lucky Bay).

Flg: Sept-Nov



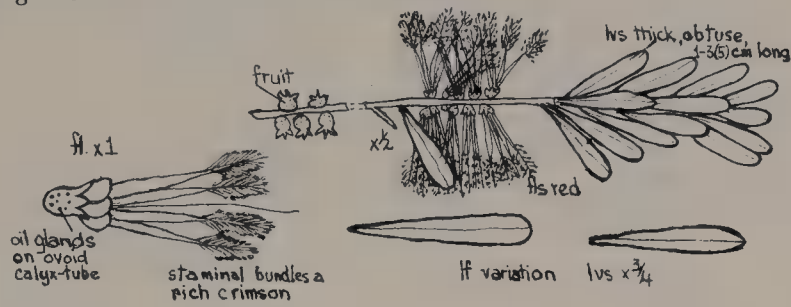
23 ***C. asper***

D. Leaves oblong-cuneate to oblanceolate, flat.

Habit: Spreading glabrous shrub 1-2.5 m high.

Distribn: Ir (Ajana), Ir (C) (Geraldton, Kalbarri).

Flg: Aug-Oct



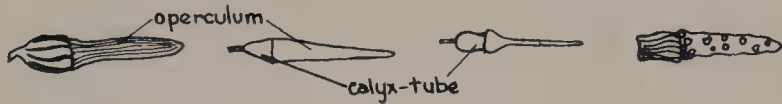
24 **C. homalophyllus**  
Murchison  
Clawflower

25 *Eucalyptus*

Key based mainly on bud and fruit characters. For an alternative key to the most commonly encountered species see p. 226. Should buds and fruits on a tree be out of reach, a search of the ground below often will provide adequate material.

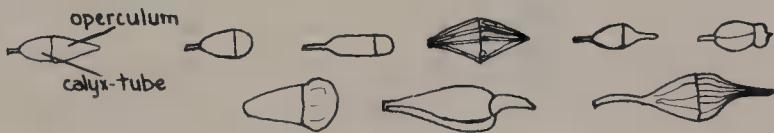
A. Operculum (budcap) at least twice as long as the calyx-tube.†

Page



Section 1

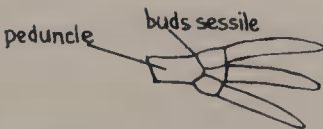
A. Operculum not twice as long as the calyx-tube (sometimes equal to and frequently shorter than the calyx-tube).



Section 2 165

Section 1

A. Buds sessile on peduncles.



(alternate A p. 158)

† The term 'calyx-tube' has been retained here (cf. Bentham vol. 1 p. xix, Blakely 1965, Willis 1972). The following names have been used by other authors for the same structure: 'hypanthium' (Gardner 1953-63, Chippendale 1973); 'floral tube' (Beadle *et al.* 1972); 'torus' (Black 1952); 'receptacle' (Curtis & Somers 1975).



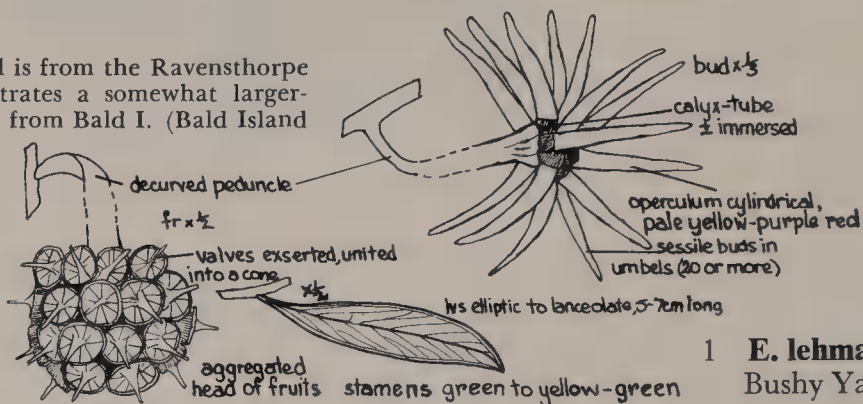
B. Fruits aggregated in a solid mass at the end of a decurved and flattened peduncle.

Habit: Mallee or small tree 4-8 m high, with a broad dense crown; bark smooth, greenish-grey to brownish or reddish, tending to become rough in the lower parts with age.

Distribn: Ey (Ravensthorpe), Ey (C) (Mts Barren-Israelite Bay), St, St (C) (Albany - Bald I. - Cape Riche).

Flg: Sept-Mar

Note. The form illustrated is from the Ravensthorpe area. C. A. Gardner illustrates a somewhat larger-flowered and -fruited form from Bald I. (Bald Island Marlock).



1 *E. lehmannii*  
Bushy Yate

B. Fruits distinct, not aggregated.

C. Fruit valves exerted.

D. Valves remaining connivent in the mature fruit.

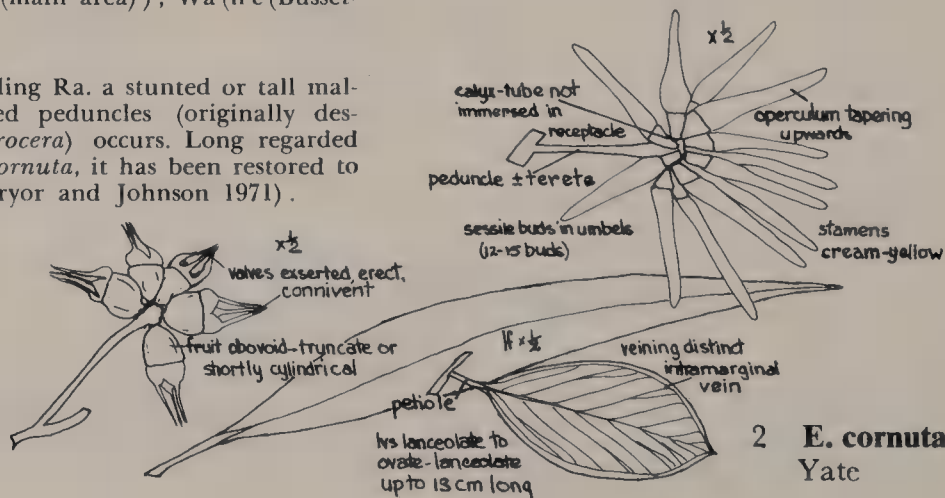
E. Fruit under 1 cm in diameter; valves erect.

Habit: Tree 15-22 m high; bark rough, dark grey, often furrowed.

Distribn: Ey (C) (Bremer Bay - Dalyup R. area), Recherche Arch. (Observatory I.), St (Stirling Ra.), St (C) (Albany), Wa (Frankland R. - Mt Barker (main area)), Wa (n c (Busselton), w c, s c).

Flg: Nov-Feb

Note. In the Stirling Ra. a stunted or tall mallee with flattened peduncles (originally described as *E. macrocera*) occurs. Long regarded as a form of *E. cornuta*, it has been restored to species status (Pryor and Johnson 1971).



2 *E. cornuta*  
Yate

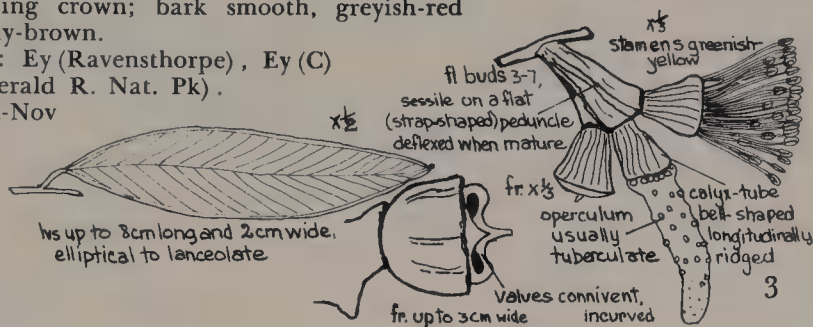


- E. Fruit 2-3 cm in diameter; valves much incurved.

Habit: Tree up to 10 m high with sparse spreading crown; bark smooth, greyish-red or ashy-brown.

Distribn: Ey (Ravensthorpe), Ey (C) (Fitzgerald R. Nat. Pk).

Flg: Oct-Nov



**E. megacornuta**  
Warted Yate

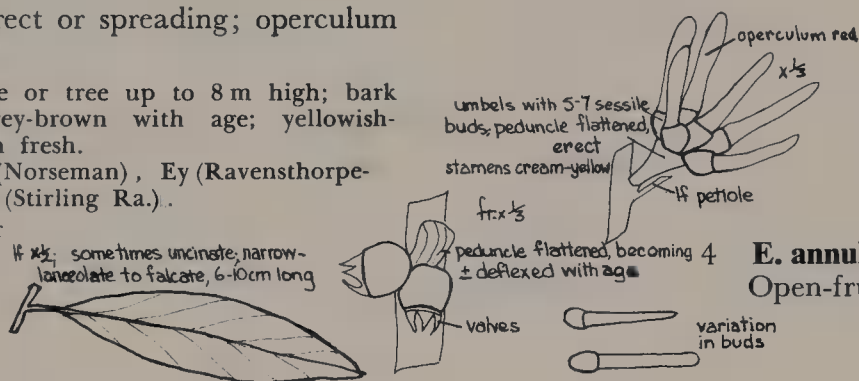
- D. Valves free in mature fruit.

- E. Peduncles erect or spreading; operculum smooth.

Habit: Mallee or tree up to 8 m high; bark smooth, grey-brown with age; yellowish-green when fresh.

Distribn: Co (Norseman), Ey (Ravensthorpe-Gibson), St (Stirling Ra.).

Flg: Sept-Mar



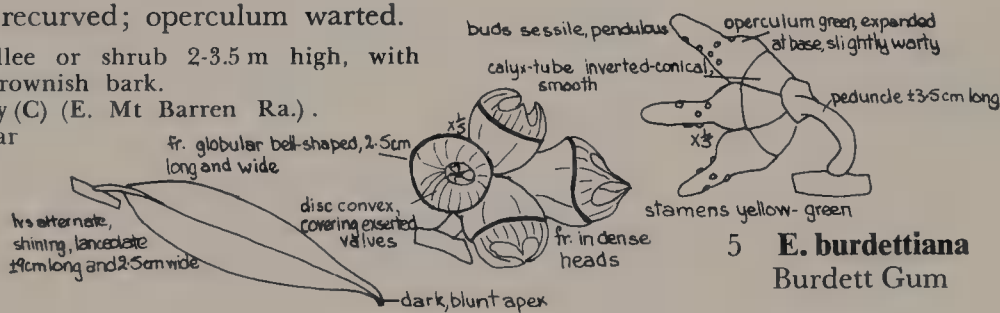
**E. annulata**  
Open-fruited Mallee

- E. Peduncles recurved; operculum warted.

Habit: Mallee or shrub 2-3.5 m high, with smooth brownish bark.

Distribn: Ey (C) (E. Mt Barren Ra.).

Flg: Feb-Mar



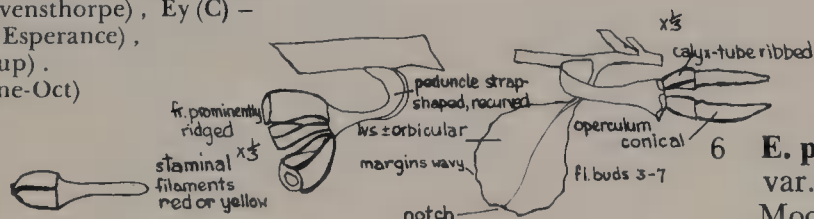
**E. burdettiana**  
Burdett Gum

- C. Fruit valves included.

Habit: Small tree 3-6 m high, trunk stout with spreading branches; bark smooth, grey.

Distribn: Ey (Ravensthorpe), Ey (C) - St (C) (Albany-Esperance), St (Gnowangerup).

Flg: Dec-Feb (June-Oct)



**E. platypus**  
var. **platypus**  
Moort

Leaves narrow-oblong or broadly lanceolate; calyx smaller and not as prominently ribbed as in the type species.

Habit: Mallee or tree 3-9 m high; bark smooth, grey.

Distribn: Ey (C) (Hamersley R. - Kundip-Hopetoun), St (Kalgan).

Note. Pryor and Johnson (1971) state that this is probably a hybrid *E. platypus* x *E. spathulata* [subsp. *grandiflora*]. Chippendale (1976), however, accepts it as a variety.



6a ***E. platypus***  
var. ***heterophylla***  
Coastal Moort

A. Buds pedicellate on peduncles.



B. Fruit valves exserted.

Note. Because the valves are brittle and frequently break off, so that they may appear to be lacking in mature fruits, some of the following are also keyed out under the alternate B, p. 162.

(alternate B p. 162)

C. Fruit bell-shaped or  $\pm$  hemispherical (globular), truncate or domed with erect rim.

(alternate C p. 160)

D. Fruits  $\pm$  smooth (sometimes wrinkled or finely ribbed).

(alternate D p. 160)

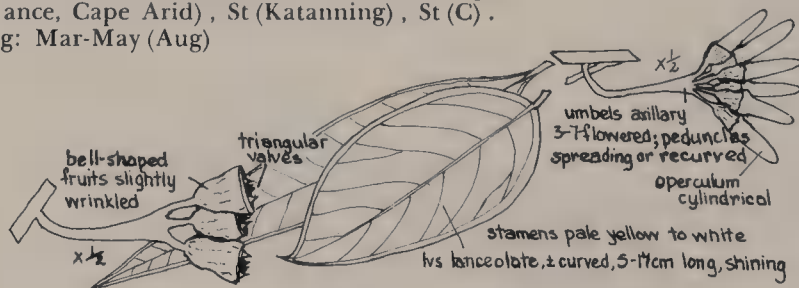
E. Operculum cylindrical or oblong-cylindrical.

F. Valves triangular, short-pointed; bark rough.

Habit: Tree up to 24 m high; bark on trunk and lower parts of main branches rough, flaky-fibrous; the branches have a smooth yellowish-grey bark; crown of tree broad and flat. See note under no. 8 re mallee forms.

Distribn: Ey (Ravensthorpe), Ey (C) (Esperance, Cape Arid), St (Katanning), St (C).

Flg: Mar-May (Aug)

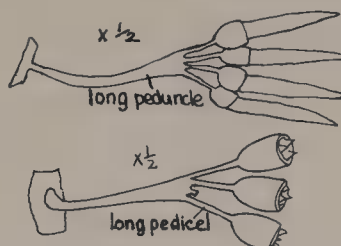


7 ***E. occidentalis***  
var. ***occidentalis***  
Swamp or  
Flat-topped Yate

Peduncles and pedicels longer than in type species, and calyx-tube more slender.

Distribn: Co (L. Cowan).

Note. Pryor & Johnson (1971) foreshadow a status change. Chippendale (1976) regards the variety as doubtful.



7a ***E. occidentalis***  
var. ***stenantha***  
Slender-flowered  
Yate

F. Valves  $\pm$  subulate, shortly exserted;  
trunk bark smooth.

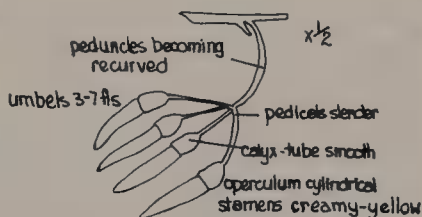
G. Base of operculum the same width as  
calyx-tube; leaves broad-lanceolate.

Habit: Tree to 17 m high; trunk up to  
75 cm in diameter; branches erect; bark  
smooth, reddish-brown and green.

Distribn: Av (York), Ey (Ravensthorpe),  
St (Wagin, Stirling Ra., L. Grace).

Flg: Oct-Nov

Note. Mallee forms of *E. astringens* and *E. occidentalis* occurring in the more eastern areas of their distribution appear to be very similar. They can be separated only by the larger operculum, the larger fruit, broader and stronger valves and broader leaves in *E. occidentalis*.



8 ***E. astringens***  
Brown Mallet



G. Base of operculum narrower than  
calyx-tube; leaves linear-lanceolate.



9 ***E. spathulata***  
subsp. ***spathulata***  
Swamp Mallet  
(see also p. 213)

E. Operculum conical or conical-attenuate  
(beaked).

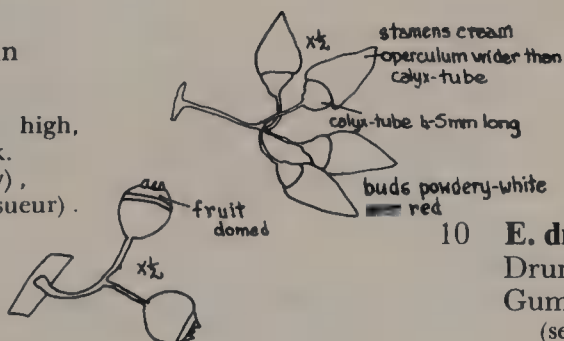
F. Fruit domed.

G. Buds  $\pm$  17 mm long, 6-12 mm in  
diameter.

Habit: A small crooked tree 4-8 m high,  
with smooth, powdery, white bark.

Distribn: Av (Wongan Hills, Pingelly),  
Da (Collie), Ir (Ajana), Le (Mt Lesueur).

Flg: Sept-Dec



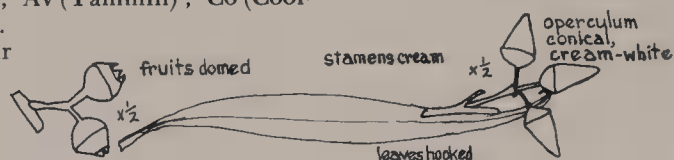
10 ***E. drummondii***  
Drummond's  
Gum  
(see also p. 219)

G. Buds 9-11 mm long and about 6 mm in diameter.

Habit: Mallee with smooth whitish-grey bark.

Distribn: An, Av (Tammin), Co (Coolgardie), Ir.

Flg: Sept-Mar



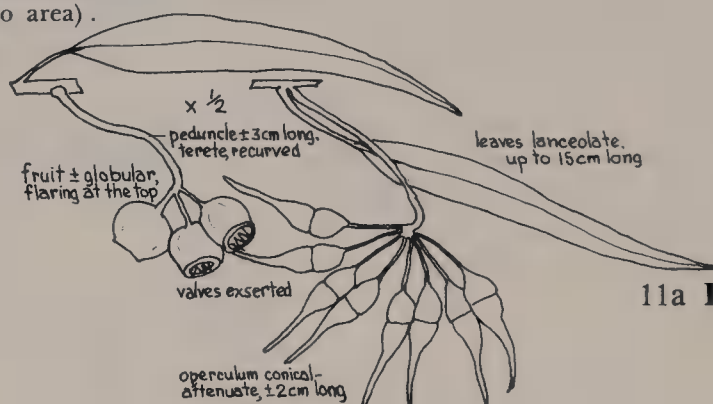
11 ***E. leptopoda***  
Tammin Mallee  
(see also p. 219)

F. Fruit not domed; disc broad but below rim level.

Habit: Mallee up to 4 m high with smooth grey bark.

Distribn: Ir (C) (between Murchison R. and Shark Bay: Wannoo area).

Flg: Apr



11a ***E. beardiana***

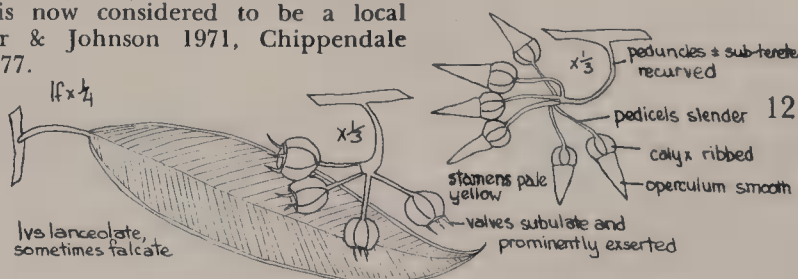
D. Fruits ribbed (exc. variant *ecostata*).

Habit: Occurs as a mallee or a tree, from 3-9 m high, with smooth grey-brown bark.

Distribn: Da (Helena R., Mundaring), Ey, Ey (C) (Hopetoun-Esperance), St (Narrogin, Stirling Ra.).

Flg: (Nov-Dec) Feb-Apr

Note. A form with little or no ribbing on buds or fruits which was originally described as *E. falcata* var. *ecostata* is now considered to be a local variant (Pryor & Johnson 1971, Chippendale 1976). See p. 177.



12 ***E. falcata***  
Silver or White Mallet

C. Fruit ± obconical (goblet-shaped), urn-shaped, pear-shaped or cylindrical.



## D. Fruit smooth.

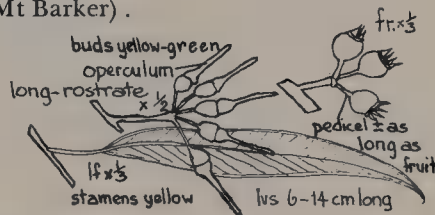
## E. Operculum long-rostrate or with a long narrow beak.

## F. Leaves spreading, blue-green; branchlets (and sometimes the buds) markedly glaucous.

Habit: Usually a tree (15-21 m), bark smooth, white or grey; mallee forms are found towards the south coast.

Distribn: Av (Wongan Hills), Co (Comet Vale-Norseman, Westonia-Coolgardie), Ey, (Ey (C) (Hopetoun), St (Mt Barker).

Flg: Aug-Nov



- 13 ***E. transcontinentalis***  
(earlier *E. oleosa*  
var. *glauca*)  
Redwood or Boongul  
(see also p. 223)

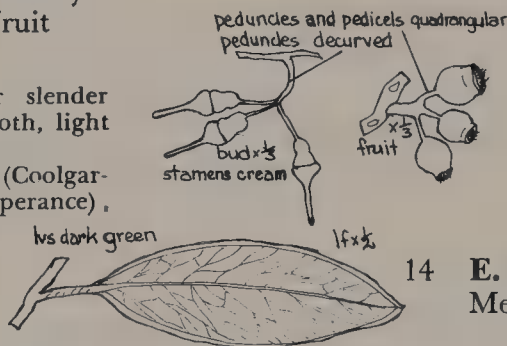
## F. Leaves dark green or dull bluish-green; branchlets not glaucous.

## G. Operculum slightly wider than calyx-tube, narrowing into a beak; fruit urn-shaped.

Habit: Many-stemmed mallee or slender tree up to 12 m high; bark smooth, light grey.

Distribn: Av (Wongan Hills), Co (Coolgardie), Ey, Ey (C) (Hopetoun, Esperance), Ir (Mingenew), St (Mt Barker).

Flg: Normally Sept-Dec



- 14 ***E. flocktoniae***  
Merri  
(see also p. 187)

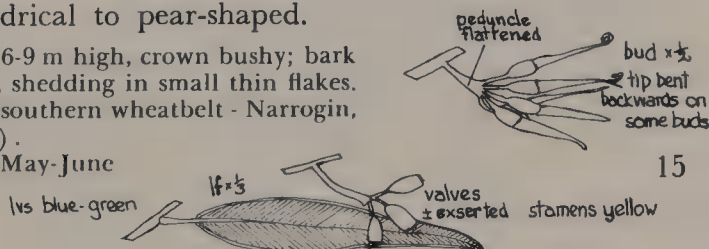
## G. Operculum the same width as calyx-tube.

## H. Operculum narrow, elongated, with the tip sometimes bent backwards; fruits cylindrical to pear-shaped.

Habit: Tree 6-9 m high, crown bushy; bark silver-grey, shedding in small thin flakes.

Distribn: St (southern wheatbelt - Narrogin, Katanning).

Flg: Mainly May-June



- 15 ***E. gardneri***  
Blue Mallet



H. Operculum conical-attenuate; fruit  
± urn-shaped, flaring at the top.

11a **E. beardiana**  
(see p. 160)

E. Operculum conical or narrow-cylindrical.



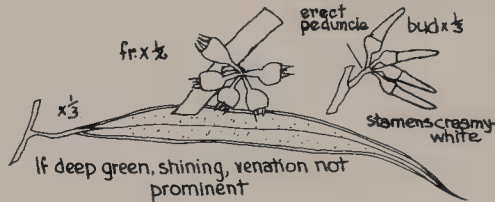
F. Peduncles erect or spreading.

Habit: Tall tree 18-30 m high, with rough grey bark up to lower branches.

Distribn: An, Av (Tammin), Co (Coolgardie), St (Narrogin, Cranbrook).

Flg: Nov-Mar

Note. Trees from the St district often have longer-beaked opercula than those from other botanical districts.



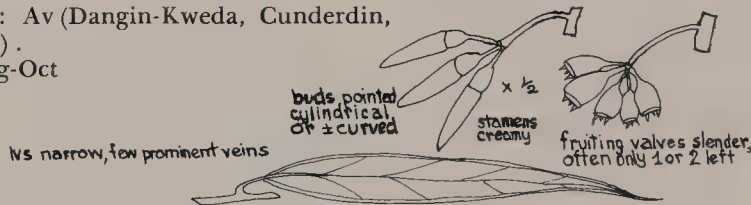
16 **E. longicornis**  
Red Morrel  
(see also p. 223)

F. Peduncles recurved.

Habit: Small tree (7-10 m high), with short main trunk covered on the lower part by a rough, dark-grey, flaky bark. Salt-tolerant tree.

Distribn: Av (Dangin-Kweda, Cunderdin, Wyola).

Flg: Aug-Oct



17 **E. sargentii**  
Salt River  
Gum

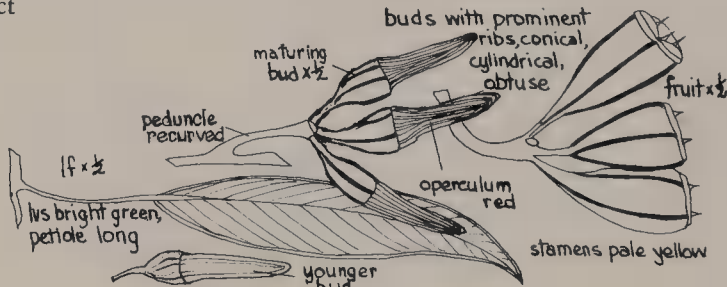
D. Fruits ribbed or fluted.

Habit: Shrubby mallee or small tree with smooth bark, yellowish-pink or grey, up to 8 m high.

Bark sometimes rough at base of trunk.

Distribn: Av (Dalwallinu-Dowerin-Kellerberrin).

Flg: July-Oct



18 **E. stowardii**  
Fluted-horn  
Mallee or  
Stoward's Mallee

B. Fruit valves included or apparently so.

See note under preceding B (p. 158).



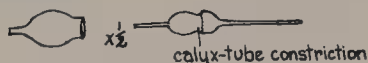
C. Fruit obconical, urn-, cup-, goblet- or top-shaped to cylindrical, under 1 cm wide (except *E. stowardii*).

(alternate C p. 165)

D. Peduncles recurved (or at least when fruits are mature).

E. Calyx-tube smooth.

F. Fruit urn-shaped; calyx-tube constricted in the middle (below the operculum).



14 ***E. flocktoniae***  
(see p. 161)

F. Fruit goblet-shaped to cylindroid; calyx-tube obovate.



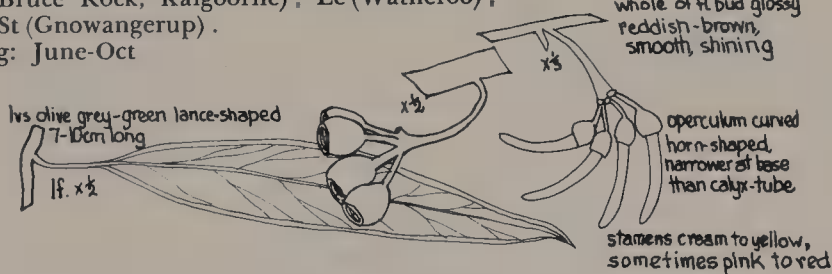
G. Mallee with several stems from a stock-like base, 3-6 m high.

Habit: Bark cinnamon-brown, smooth except in late summer during shedding.

Distribn: Av (Kellerberrin), Co (Beacon, Bruce Rock, Kalgoorlie), Le (Watheroo), St (Gnowangerup).

Flg: June-Oct

lvs olive grey-green lance-shaped  
7-10cm long  
lf. x 1/2



19 ***E. eremophila***  
Tall Sand Mallee

Calyx-tube more cylindrical and considerably longer than in the typical species; fruit rather larger, faintly striate.

Distribn: Co (Kurrawang).

Note. This was earlier described as var. *grandiflora*. Chippendale (1976) considers it is a form variant of *E. eremophila*.



19a ***E. eremophila***  
(a form)

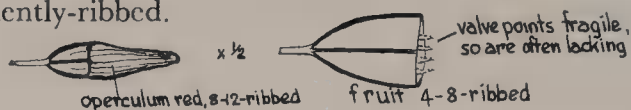
G. Small tree 8-11 m high, with rough grey flaky bark.



17 ***E. sargentii***  
(see p. 162)

E. Calyx-tube ribbed or fluted.

## F. Operculum prominently-ribbed.

18 **E. stowardii**  
(see p. 162)

## F. Operculum smooth.

Leaves shorter than in the typical species; umbels with 3 flowers; fruits 2-4 ribbed, with 2 of the ribs sometimes expanded into narrow wings.

Distribn: Co (Hatters Hill).

Flg: Feb

Note. This was earlier described as var. (later subsp.) *ptero-carpa*. Chippendale (1976) considers it is a form variant of *E. eremophila*.

19b **E. eremophila**  
(a form)

## D. Peduncles erect or spreading.

## E. Operculum cylindrical-conical.

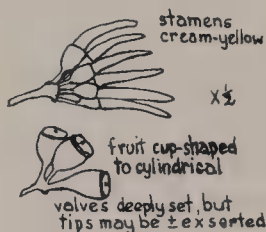
F. Peduncles  $\pm$  terete.

Habit: Mallee 1-3 m high, with smooth light-to grey-brown bark.

Distribn: Av (Wongan Hills), Co (Narembreen), Ey (Ravensthorpe), Ey (C) (Esperance area), Ir (Greenough, Northampton), St (Kojonup), St (C),

Flg: Dec-Mar

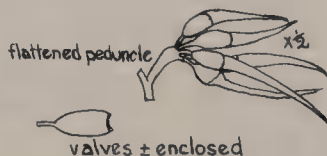
Note. A mallee or small tree growing in the Hutt River area, with smooth black bark and broader leaves (earlier known as var. *melanophloia*) is now considered to be within the normal variation of *E. redunca* var. *redunca*.

20 **E. redunca**  
Black Marlock  
(see also p. 198 and p. 223)

## F. Peduncles flattened.

## G. Operculum long, narrow, with the tip sometimes bent backwards; fruit cylindrical to pear-shaped; leaves blue-green.

Habit: Tree 6-9 m high, with silvery-grey, smooth, deciduous bark.

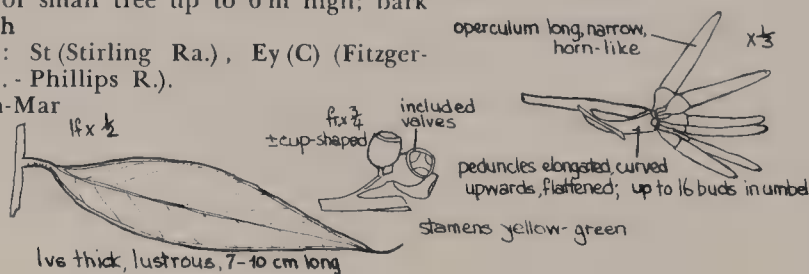
15 **E. gardneri**  
(see p. 161)

## G. Operculum long, narrow, horn-like; fruits cup-shaped; leaves bright green.

Habit: Mallee forming clumps up to 3 m high, or small tree up to 6 m high; bark smooth

Distribn: St (Stirling Ra.), Ey (C) (Fitzgerald R. - Phillips R.).

Flg: Jan-Mar

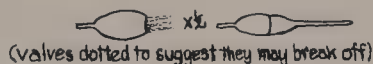
21 **E. macrandra**  
Long-flowered  
Marlock

## E. Operculum long, rostrate.

Leaves, buds and fruits powdery-white.

13 **E. transcontinentalis**

(see p. 161)



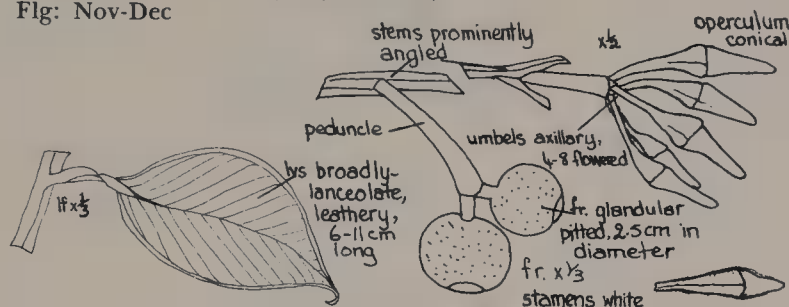
## C. Fruit globular-truncate, above 1 cm wide.

## D. Pedicels thick; leaves rigid, thick.

Habit: Usually a stout tree 12-15 m high; bark coarse, partly deciduous.

Distribn: St (C), Wa (C) (Denmark).

Flg: Nov-Dec

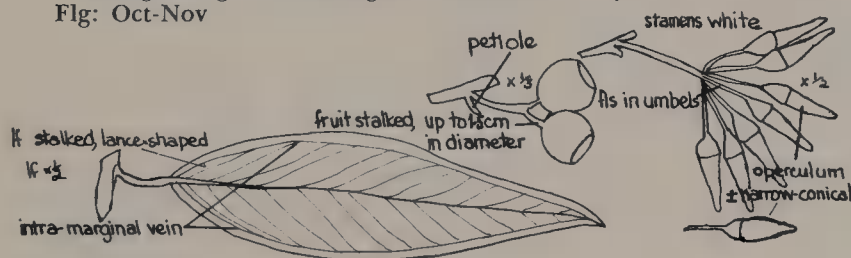
22 **E. staeri**  
Albany Blackbutt

## D. Pedicels slender; leaves thin.

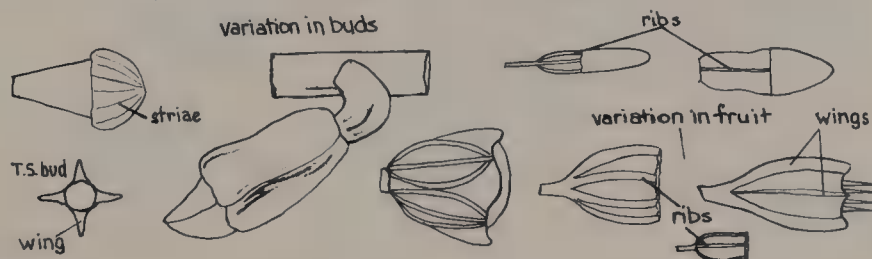
Habit: Tall tree (up to 46 m high), smaller tree (to 9 m) or mallee ( $\pm 3$  m); bark persistent, fibrous, reddish-grey or brown.

Distribn: Av, Da, Ey, Le, St, St (C). The main area of prime jarrah forest stretches from Mundaring along the Darling Ra. towards Albany.

Flg: Oct-Nov

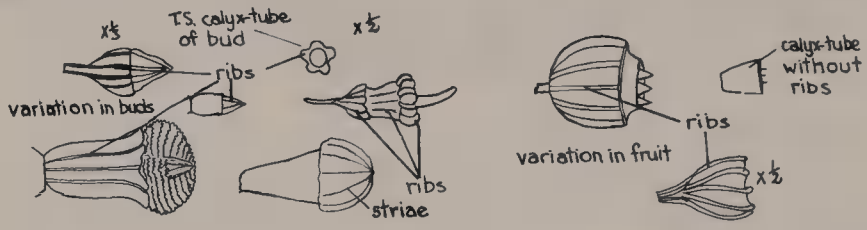
23 **E. marginata**  
Jarrah

## Section 2

A. Operculum (bud-cap) or calyx-tube, or both, prominently ribbed, striate, angled or winged.

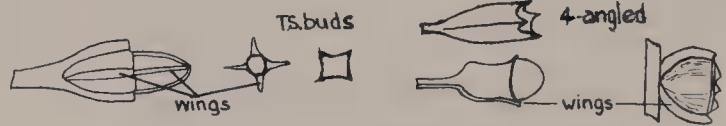
B. Operculum or calyx-tube or both with more than 4 ribs or striae.

Page



Subsection 1 167

B. Operculum or calyx-tube or both with 2-4 angles or wings.

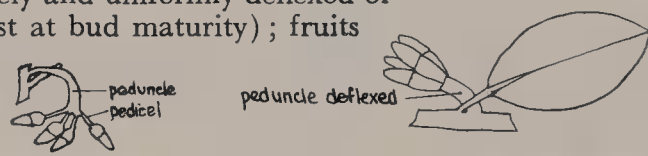


Subsection 2 178

A. Operculum and calyx-tube smooth or only slightly ribbed, corrugated, rugose or striate.



B. Peduncles definitely and uniformly deflexed or drooping (at least at bud maturity); fruits pendulous.

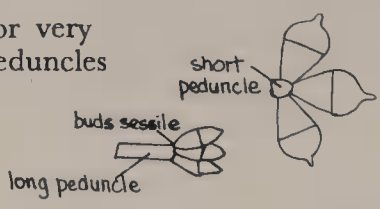


Subsection 3 183

B. Peduncles erect or spreading (occasionally ± deflexed or ± absent).

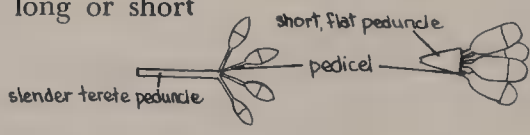


C. Buds ± sessile (pedicels lacking or very short) arranged on long or short peduncles

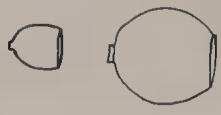


Subsection 4 188

C. Buds definitely pedicellate on long or short peduncles.

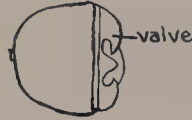


D. Fruit valves included.



Subsection 5 194

- D. Fruit valves exerted (valves are brittle and frequently break off, so that all stages of fruiting need to be examined).



Subsection 6 212



### Subsection 1

- A. Fruit (and earlier the calyx-tube) deeply ribbed or corrugated.  
(the operculum is also often ribbed or striate.)



(alternate A p. 173)

- B. Fruit  $\pm$  sessile on peduncles or on short thick pedicels attached to erect or recurved peduncles.



(alternate B p. 169)

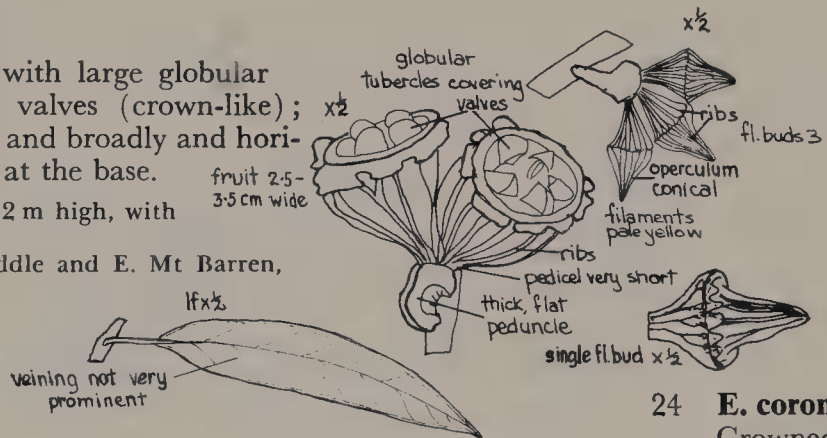
- C. Peduncles erect.

- D. Fruit top-shaped, with large globular tubercles covering valves (crown-like); operculum conical and broadly and horizontally expanded at the base.

Habit: Mallee up to 2 m high, with smooth grey bark.

Distribn: Ey (C) (Middle and E. Mt Barren, Whoogarup Ra.).

Flg: July-Aug



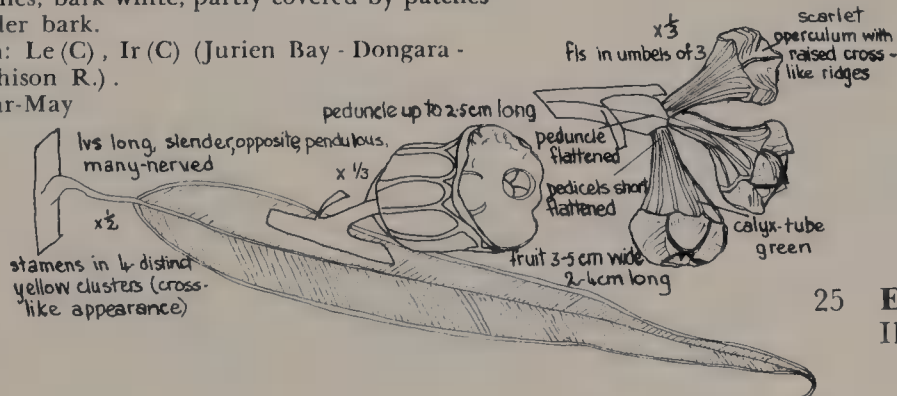
24 ***E. coronata***  
Crowned Mallee

- D. Fruit bell-shaped; operculum domed, scarlet, with 4 raised ridges forming a cross.

Habit: Small tree 5-8 m high, with spreading branches; bark white, partly covered by patches of older bark.

Distribn: Le (C), Ir (C) (Jurien Bay - Dongara - Murchison R.).

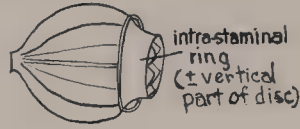
Flg: Mar-May



25 ***E. erythrocorys***  
Illyarrie

C. Peduncles recurved.

D. Fruit with prominent intra-staminal ring.



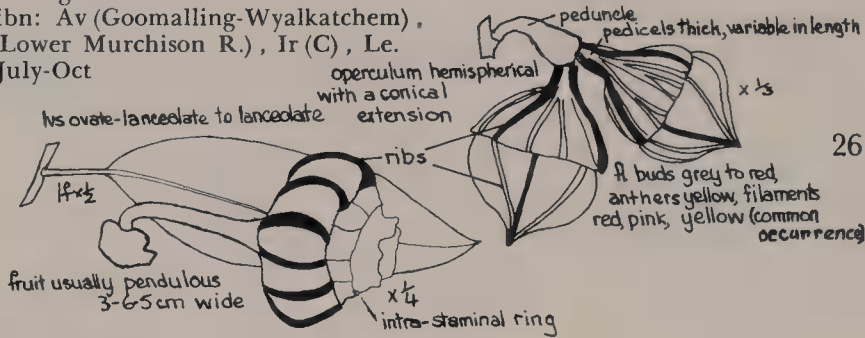
E. Bark smooth, grey on trunk.

Habit: Mallee 2-4.5 m high, with branchlets of a shining red colour.

Distribn: Av (Goomalling-Wyalkatchem),

Ir (Lower Murchison R.), Ir (C), Le.

Flg: July-Oct



26 ***E. pyriformis***  
Pear-fruited  
Mallee

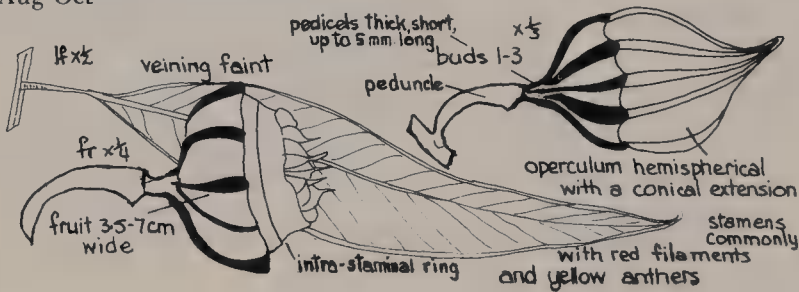
(see also p. 173)

E. Bark rough, dark grey on trunk.

Habit: Mallee or small tree up to 11 m high.

Distribn: An-Co (extending inland to east and north from Kalgoorlie area).

Flg: Aug-Oct



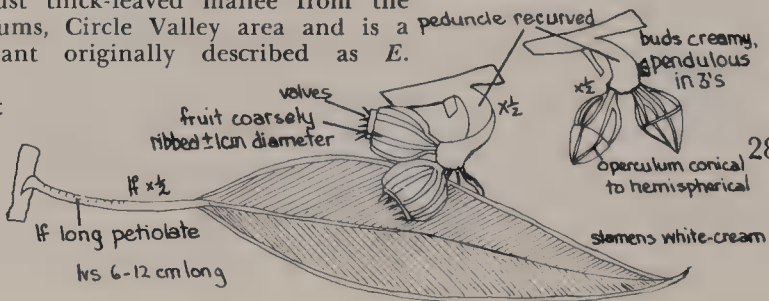
27 ***E. youngiana***  
Large-fruited  
Mallee

D. Fruit without prominent intra-staminal ring.

E. Fruit valves exerted; flower buds ± sessile in groups of 3 on a flat recurved peduncle.

Habit: Robust thick-leaved mallee from the Salmon Gums, Circle Valley area and is a local variant originally described as *E. kessellii*.

Flg: Aug-Oct



28 ***E. goniantha***  
subsp. *goniantha*  
Jerdacuttup  
Mallee

(see p. 171)

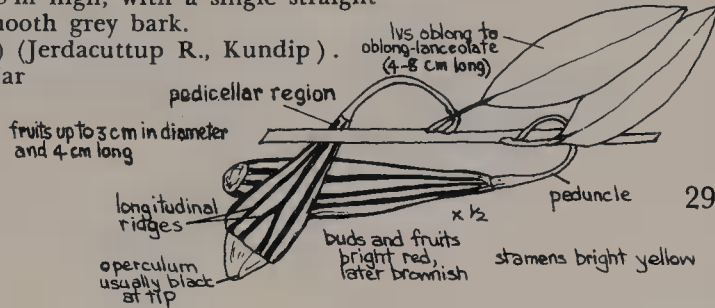


- E. Fruit valves included; flowers solitary on a long drooping peduncle, flattened towards the bud.

Habit: Tree 5-8 m high, with a single straight trunk and smooth grey bark.

Distribn: Ey (C) (Jerdacuttup R., Kundip).

Flg: Oct-Dec-Mar



29

***E. stoatei***  
Scarlet Pear Gum

- B. Fruit on  $\pm$  slender pedicels arranged on erect or recurved peduncles.

- C. Operculum hemispherical, blunt or with a narrow horn-like extension.

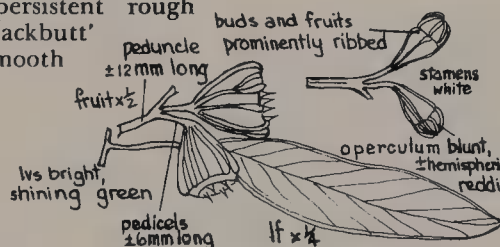
- D. Operculum obtusely-hemispherical or depressed-hemispherical.

- E. Peduncles  $\pm$  rounded, erect; buds in umbels, usually of 3 on short pedicels.

Habit: Mallee or tree up to 15 m high with a spreading crown. The lower part of the trunk is usually covered with persistent rough scaly bark giving a dark 'blackbutt' appearance. Upper bark is smooth and greyish-white.

Distribn: Co (Coolgardie-Norseman area).

Flg: Nov-Jan



30

***E. corrugata***  
Rough-fruited  
Mallee

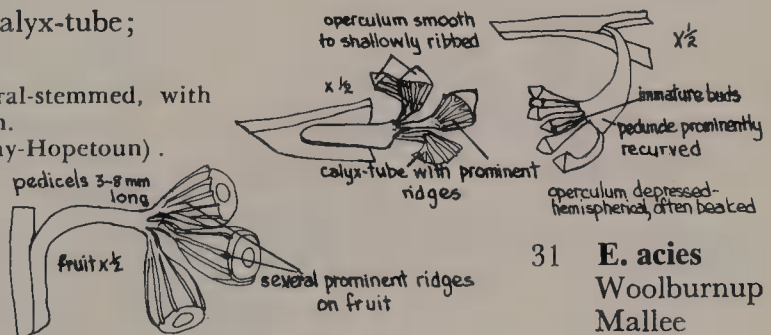
- E. Peduncles flattened, mostly recurved; buds in clusters of up to 7.

- F. Operculum as wide as calyx-tube; valves included.

Habit: Mallee shrub, several-stemmed, with smooth bark, 1-2.5 m high.

Distribn: Ey (C) (Bremer Bay-Hopetoun).

Flg: Sept-Nov



31

***E. acies***  
Woolburnup  
Mallee

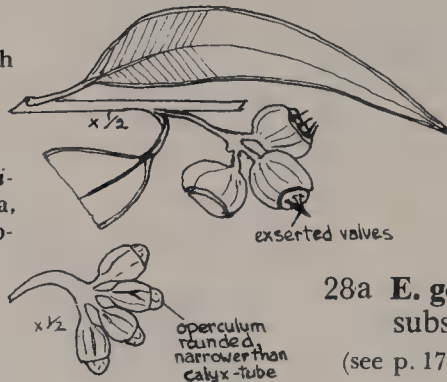
- F. Operculum narrower than calyx-tube;  
valves exserted.

Habit: Erect mallee up to 3 m high, with  
smooth grey bark.

Distribn: Ey (C) (Mt Le Grand).

Flg: Apr

Note. Differs from *E. goniantha* subsp. *goni-*  
*antha* (see p. 171) in the rounded opercula,  
longer and more slender pedicels and sub-  
globose fruit.



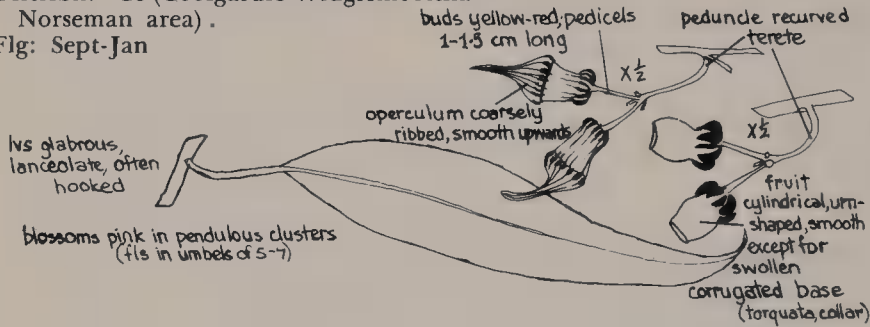
28a ***E. goniantha***  
subsp. ***semiglobosa***  
(see p. 171 and also p. 168)

- D. Operculum hemispherical, with a long  
narrow beak.

Habit: Tree 5-8 m high; trunk covered with  
grey-black fissured rough bark.

Distribn: Co (Coolgardie-Widgiemooltha-  
Norseman area).

Flg: Sept-Jan



32 ***E. torquata***  
Coral Gum

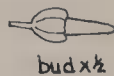
- C. Operculum conical or with a short point  
(beak) or  $\pm$  cylindrical.

- D. Fruit small, rarely up to 1.5 cm in  
diameter.

(alternate D p. 172)

- E. Peduncles recurved (at least in fruit).

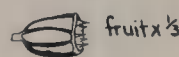
- F. Base of operculum narrower than top of  
calyx-tube.



12 ***E. falcata***  
(see p. 160)

- F. Base of operculum as broad as top of  
calyx-lobe.

- G. Operculum conical-cylindrical, obtuse;  
peduncles  $\pm$  terete.



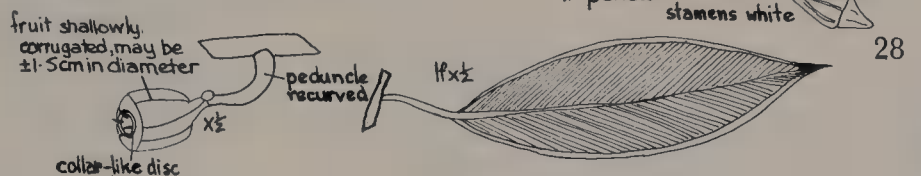
18 ***E. stowardii***  
(see p. 162)

## G. Operculum conical; peduncles flat.

Habit: Thick-leaved bushy mallee. Flower-buds mainly in clusters of 4-8.

Distribn: Ey (C) (Jerdacuttup-Dalyup R.).

Flg: Aug-Oct



28

***E. goniantha***  
subsp. ***goniantha***  
Jerdacuttup  
Mallee  
(see pp. 168 and 170)

## E. Peduncles erect or spreading.

## F. Both operculum and calyx-tube markedly corrugated.

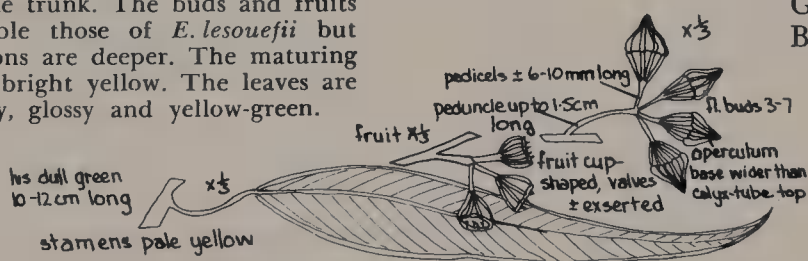
G. Peduncles and pedicels long,  $\pm$  terete; operculum conical, beaked or pointed.

Habit: Tree up to 12 (15 m) high; bark at base (to  $\pm$  2 m) rough, flaky, dark, persistent; above this it is smooth and light silvery-brown; branchlets reddish.

Distribn: Co (Kalgoorlie-Norseman district).

Flg: Oct-Dec (Mar)

Note. What appears to be an undescribed form of *E. lesouefii*, known to foresters as *E. 'pterocarpa'* (an ms name by C. A. Gardner) occurs at Norseman. It is a tall tree (up to 13 m) with smooth whitish bark over the whole trunk. The buds and fruits closely resemble those of *E. lesouefii* but the corrugations are deeper. The maturing buds become bright yellow. The leaves are large, leathery, glossy and yellow-green.



33

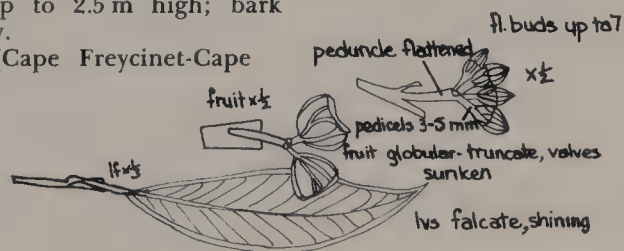
***E. lesouefii***  
Goldfields  
Blackbutt

## G. Peduncles and pedicels shorter than in preceding species, and flattened; operculum broad conical.

Habit: A mallee up to 2.5 m high; bark smooth, light grey.

Distribn: Wa (w c) (Cape Freycinet-Cape Hamelin).

Flg: May-June



34

***E. calcicola***  
Hamelin Bay  
Mallee

F. Calyx-tube  $\pm$  deeply corrugated; operculum smooth or faintly striate.

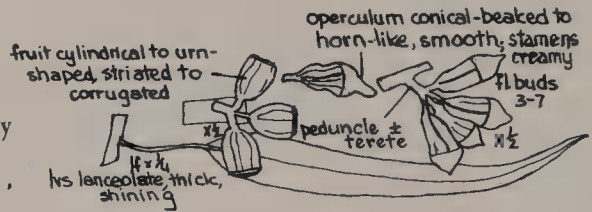
G. Peduncles terete or just slightly flattened.

Habit: Mallee up to 4.5 m high, with smooth grey-brown bark.

Distribn: Co (Comet Vale, Merredin), Ey (Ravensthorpe), Ey (C) (Bremer Bay-Cape Arid), St (Narrogin, Stirling Ra.), St (C).

Flg: (Sept) Oct-Nov (May)

Note. It includes the form variant [with the operculum contracted into a terete beak or horn ('Horn-capped Mallee' which occurs in the Comet Vale area)] earlier described as *E. angulosa* var. *ceratocorys*. See p. 174.



35 ***E. incrassata***  
Lerp Mallee

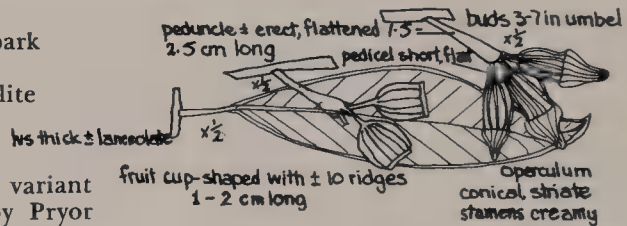
G. Peduncles broad and flat.

Habit: Mallee up to 4.5 m high; bark smooth and grey.

Distribn: Ey (C) (Bremer Bay-Israelite Bay), St (C).

Flg: Aug-Dec

Note. A status change to be a form variant of *E. incrassata* was foreshadowed by Pryor and Johnson 1971. Chippendale (1976) however accepts it as a distinct species.



36 ***E. angulosa***  
Ridge-fruited Mallee

D. Fruit large, 2.5 cm or more in diameter, with prominent intra-staminal ring present.



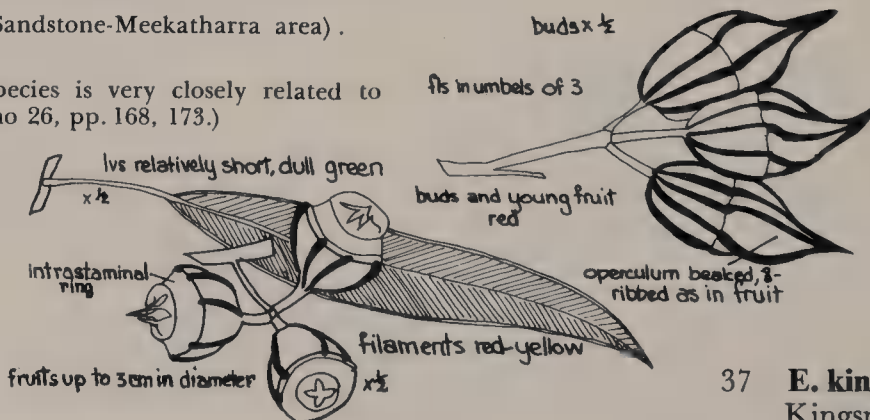
E. Peduncles  $\pm$  erect (at least in bud stage); pedicels 1-1.5 cm long.

Habit: Mallee 2-3 m high, with rough grey bark.

Distribn: An (Sandstone-Meekatharra area).

Flg: June-Aug

(Note. This species is very closely related to *E. pyriformis*, no 26, pp. 168, 173.)



37 ***E. kingsmillii***  
Kingsmill's Mallee

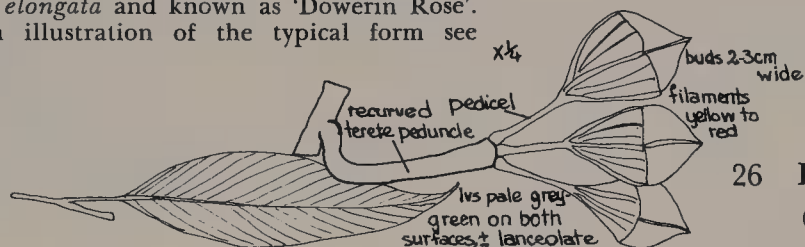
- E. Peduncles recurved from bud stage; buds elongated, tapering into a long pedicel (up to 3.5 cm long).

Habit: Mallee up to 4 m high.

Distribn: Av (Goomalling-Dowerin area).

Flg: July-Oct

Note. This illustrates a form earlier separated as var. *elongata* and known as 'Dowerin Rose'. For an illustration of the typical form see p. 168.



26 ***E. pyriformis***  
(see also p. 168)

- A. Fruit (and earlier the calyx-tube) smooth to slightly ribbed, rugose or striate.

(The operculum also varies from smooth to prominently-ribbed. Types of calyx-tube and operculum combination are illustrated.)



- B. Operculum hemispherical or obtusely hemispherical, with or without a beak.

(alternate B p. 175)

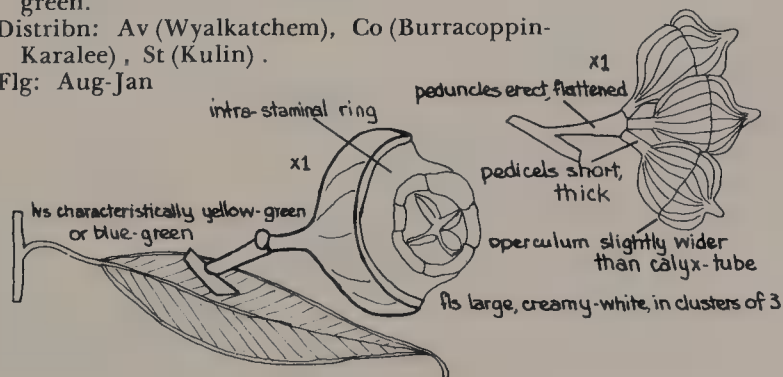
- C. Operculum prominently beaked.

- D. Fruit 1.5-2.5 cm diameter with a prominent raised intra-staminal ring.

Habit: Dense spreading mallee, usually  $\pm$  3 m high but may grow to 6 m. Bark of trunk grey to black, that of branches smooth, red or green.

Distribn: Av (Wyalkatchem), Co (Burracoppin-Karalee), St (Kulin).

Flg: Aug-Jan



38 ***E. burracoppinensis***  
Burracoppin  
Mallee



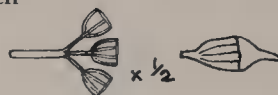
- D. Fruit not above 1 cm in diameter; no raised intra-staminal ring. Peduncle terete or somewhat flattened.

Habit: Mallee or tree up to 12 m high; bark rough, grey on lower part of trunk, smooth higher up.

Distribn: Co (Comet Vale, Merredin).

Flg: Oct-Nov

Note. The form variant earlier separated under *E. angulosa* var. *ceratocorys* keys out here. (See Chippendale 1973.)



35

***E. incrassata***

Lerp Mallee

(see p. 172)

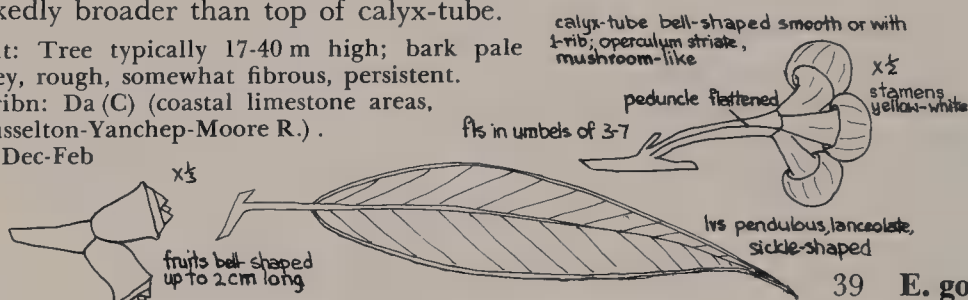
- C. Operculum without a beak.

- D. Calyx-tube sessile on peduncle; operculum markedly broader than top of calyx-tube.

Habit: Tree typically 17-40 m high; bark pale grey, rough, somewhat fibrous, persistent.

Distribn: Da (C) (coastal limestone areas, Busselton-Yanchep-Moore R.).

Flg: Dec-Feb



39

***E. gomphocephala***

Tuart

- D. Calyx-tube pedicellate on peduncle; operculum the same width as, or only slightly broader than top of calyx-tube.

- E. Operculum corrugated or lobed.

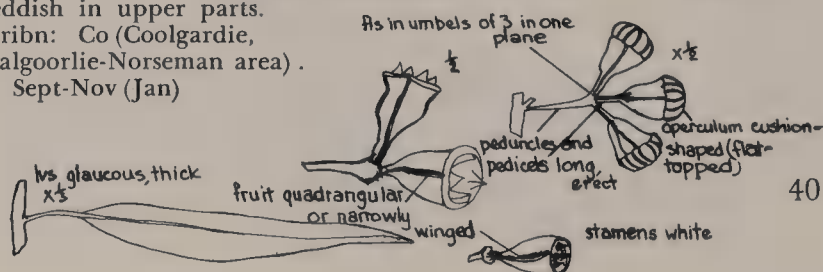
- F. Calyx-tube and fruit up to 1 cm in diameter; rugose or ribbed.

- G. Operculum slightly broader than calyx-tube; fruit with 2 prominent angles or ribs with often a few intermediate but less prominent angles.

Habit: Tree (with crooked trunk) up to 15 m high, or mallee; bark smooth, grey, reddish in upper parts.

Distribn: Co (Coolgardie, Kalgoorlie-Norseman area).

Flg: Sept-Nov (Jan)



40

***E. griffithsii***  
var. ***griffithsii***

Griffith's Grey Gum



Leaves dark green and shining, narrow, thin; fruit narrower and shorter than in the species.

Note. A status change to subspecies is foreshadowed by Pryor and Johnson (1971). Chippendale (1973, 1976) however, considers that the differences from the species are not such as to warrant varietal status.

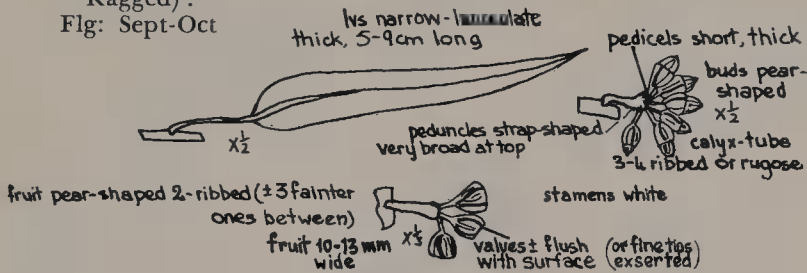
40a ***E. griffithsii***  
var. ***angustiuscula***

G. Operculum the same width as the calyx-tube; fruit with 2 prominent ribs.

Habit: Small shrubby mallee with smooth stems, 3-10 m high.

Distribn: Ey (Ravensthorpe area-Mt Ragged).

Flg: Sept-Oct



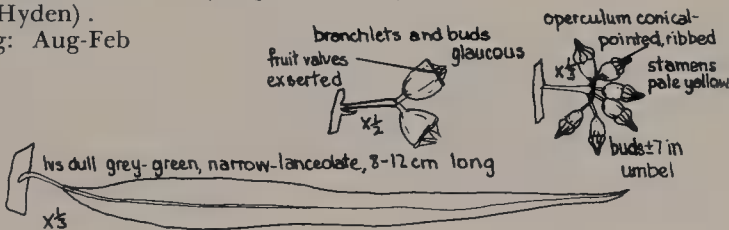
41 ***E. rugosa***  
Kingscote  
Mallee

F. Calyx-tube and fruit up to 6 mm in diameter,  $\pm$  smooth to slightly striate.

Habit: Tree 6-12 m high; bark dark, rough, persistent at base, smooth and grey above.

Distribn: An, Co (Kalgoorlie-Coolgardie-Hyden).

Flg: Aug-Feb



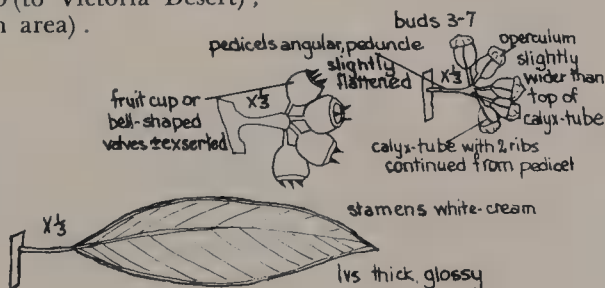
42 ***E. clelandii***  
Cleland's  
Blackbutt

E. Operculum  $\pm$  striate.

Habit: Mallee or tree 2.5-9 m high; bark often rough near base, then smooth grey.

Distribn: An-Co (to Victoria Desert), Co (Boorabbin area).

Flg: Feb-Apr



43 ***E. concinna***  
Victoria Desert  
Mallee

B. Operculum conical or conical-cylindrical.

C. Fruits  $\pm$  sessile (sometimes buds are shortly pedicellate) on peduncle.

D. Operculum  $\pm$  strongly striate; calyx-tube faintly striate or with 2 opposite ribs.

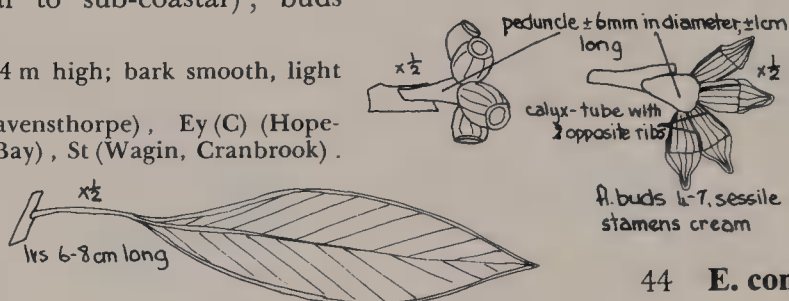
E. Fruits 6-10 mm in diameter.

F. Mallee (coastal to sub-coastal); buds closely sessile.

Habit: Mallee 2-4 m high; bark smooth, light grey.

Distribn: Ey (Ravensthorpe), Ey (C) (Hopton-Israelite Bay), St (Wagin, Cranbrook).

Flg: Dec-Mar



44 ***E. conglobata***

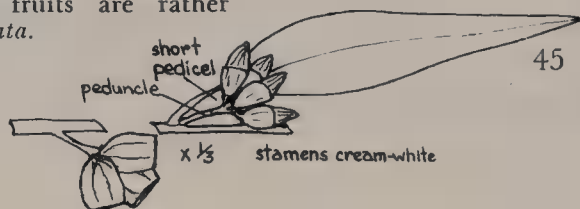
F. Tree; buds variable, sessile to shortly-pedicellate.

Habit: Erect tree up to 20 m high, with mainly smooth whitish bark.

Distribn: Co-Ey (L. Dundas, Fraser Ra., Balladonia, Scaddan).

Flg: Feb

Note. Earlier known as *E. conglobata* subsp. *fraseri*. The buds and fruits are rather larger than in *E. conglobata*.



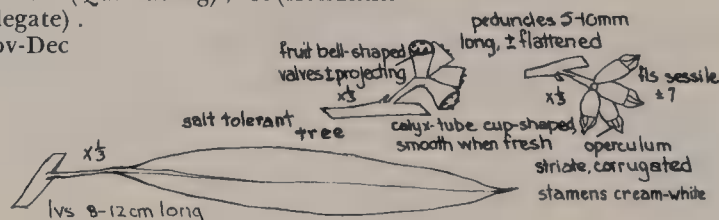
45 ***E. fraseri***  
Balladonia Gum

E. Fruits small up to 5 mm in diameter.

Habit: Tree to 15 m high with black, rough bark on the lower trunk; upper bark smooth and grey.

Distribn: Av (Quairading), St (Kondinin-Newdegate).

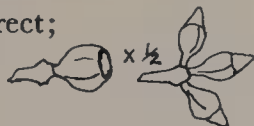
Flg: Nov-Dec



46 ***E. kondininensis***  
Kondinin Blackbutt  
or Stocking Tree

D. Operculum  $\pm$  smooth; calyx-tube ribbed.

- E. Peduncles slightly flattened, usually erect; leaves lanceolate.



- 35 ***E. incrassata***  
Lerp Mallee  
(see p. 172)

- E. Peduncles strap-shaped, recurved; leaves orbicular, notched.

Note: In the variety *heterophylla* (see p. 158) the leaves are broadly-lanceolate, the calyx-tube smaller and less strongly ribbed than in the species.



- 6 ***E. platypus***  
var. ***platypus***  
Moort  
(see p. 157)

- C. Fruits clearly pedicellate.

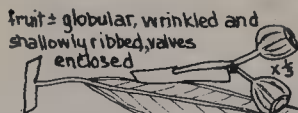
- D. Operculum smooth to slightly ribbed.

- E. Peduncles erect.

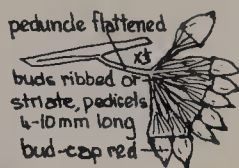
Habit: Mallee 2-3 m high, with smooth, light-grey bark.

Distribn: Ey (C) (Mt Le Grand area, Lucky Bay).

Flg: Mar-June



lvs narrow-lanceolate to lanceolate, erect, 5-10 cm long; margins and venation prominent, petioles flattened



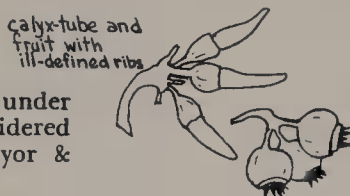
- 47 ***E. ligulata***  
Lucky Bay  
Mallee

- E. Peduncles recurved.

Distribn: Ey (C) (Hopetoun area).

Flg: Nov-Dec

Note. This form was earlier described under *E. falcata* var. *ecostata*, but it is now considered to be a local variant of *E. falcata* (Pryor & Johnson 1971).



- 12 ***E. falcata***  
Silver or White  
Mallet  
(cf. p. 160)

- D. Operculum clearly striate or ribbed, at least when dry; peduncles ± erect.

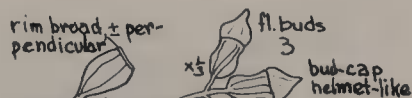
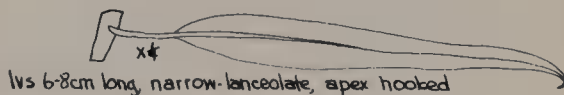
- E. Operculum conical, rostrate, wider than the calyx-tube, smooth when fresh, striate-ribbed when dry.

Habit: Usually a mallee, but sometimes a small tree up to 4.5 m high; bark smooth, grey-brown, shedding in long ribbons.

Distribn: Co (Boorabbin-Coolgardie-Norseman), Ey (Ravensthorpe area).

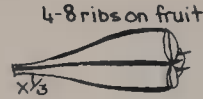
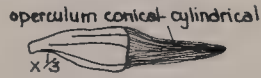
Flg: Aug-Sept

Note. Status change foreshadowed to *E. merrikkiae* subsp. *platycorys* (Pryor & Johnson 1971).



- 48 ***E. platycorys***  
Boorabbin Mallee  
(see p. 205 no 109)

- E. Operculum conical-cylindrical, the same width as calyx-tube, red in colour with up to 12 prominent ribs.



18 **E. stowardii**  
(see p. 162)

## Subsection 2

- A. Peduncles present.

(alternate A p. 183)

- B. Peduncles uniformly recurved.

(alternate B p. 180)

- C. Peduncles broad and compressed.

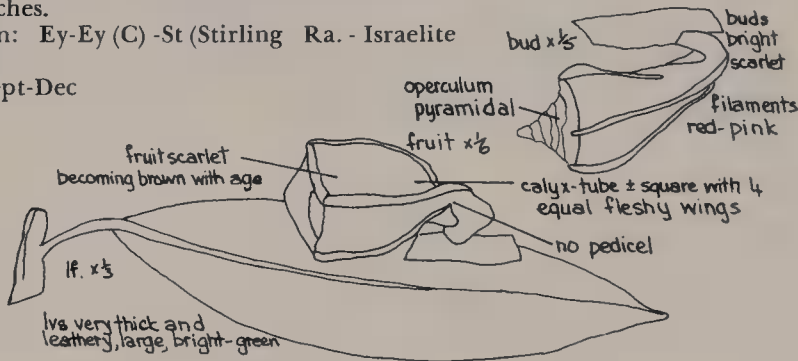
(alternate C p. 179)

- D. Operculum pyramidal or conical; buds 4-9 cm long.

Habit: Small shrub or mallee rarely exceeding 1.5 m in height, with thick dark-coloured branches.

Distribn: Ey-Ey (C) -St (Stirling Ra. - Israelite Bay).

Flg: Sept-Dec



49 **E. tetraptera**  
Four-winged  
Mallee

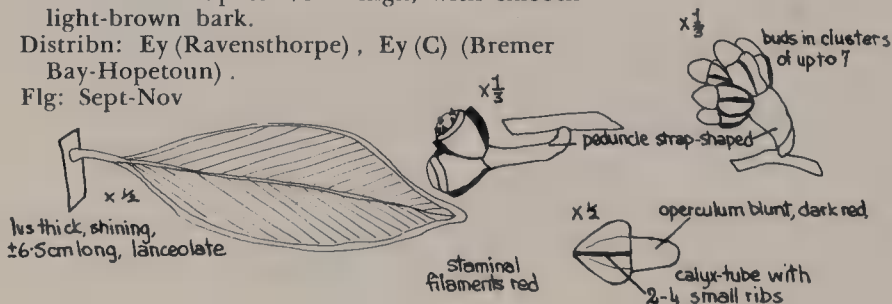
- D. Operculum conical or conical-cylindrical; buds not above 1 cm long.

- E. Calyx-tube top-shaped to ovoid with 2-4 ribs.

Habit: Mallee up to 2.5 m high, with smooth light-brown bark.

Distribn: Ey (Ravensthorpe), Ey (C) (Bremer Bay-Hopetoun).

Flg: Sept-Nov



50 **E. nutans**  
Red-flowered  
Moort

## E. Calyx-tube cylindroid with 2 or 3 ribs.

Habit: Mallee or tree 3-9 m high; bark smooth, grey.

Distribn: Ey (C), St (Kalgan).

Flg: Mar-Apr

Note. Pryor and Johnson (1971) consider that this is probably a hybrid *E. platypus* x *E. spathulata* [subsp. *grandiflora*]. Following Chippendale (1976) however, it is presently accepted as a variety.

6a ***E. platypus***  
var. ***heterophylla***

(see p. 158)

## C. Peduncles terete or angular, long.

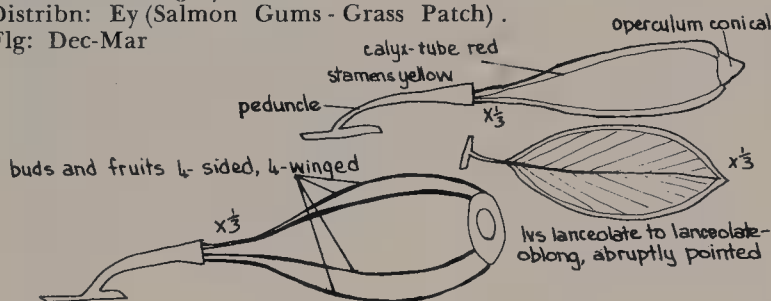
## D. Flowers usually solitary, rarely 3; fruit valves included.

## E. Operculum conical.

Habit: Mallee or small tree up to 6 m high, with smooth grey bark.

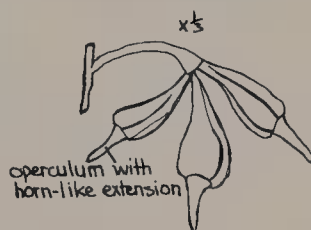
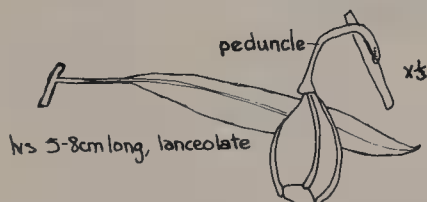
Distribn: Ey (Salmon Gums - Grass Patch).

Flg: Dec-Mar

51 ***E. forrestiana***  
subsp. ***forrestiana***  
Fuchsia Gum

## E. Operculum with horn-like extension.

Distribn: Ey (Salmon Gums - Gibson).

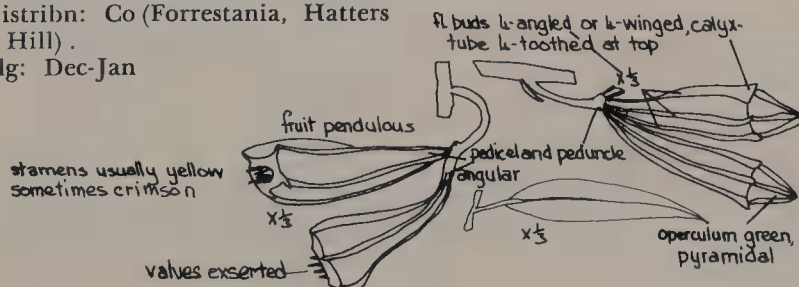
51a ***E. forrestiana***  
subsp. ***dolichorhyncha***

## D. Flowers mostly in 3s; fruit valves exserted.

Habit: Mallee or small tree up to 8 m high; bark smooth, red-brown.

Distribn: Co (Forrestania, Hatters Hill).

Flg: Dec-Jan

52 ***E. steedmanii***  
Steedman's Gum

B. Peduncles erect or spreading.

C. Buds sessile on peduncles.

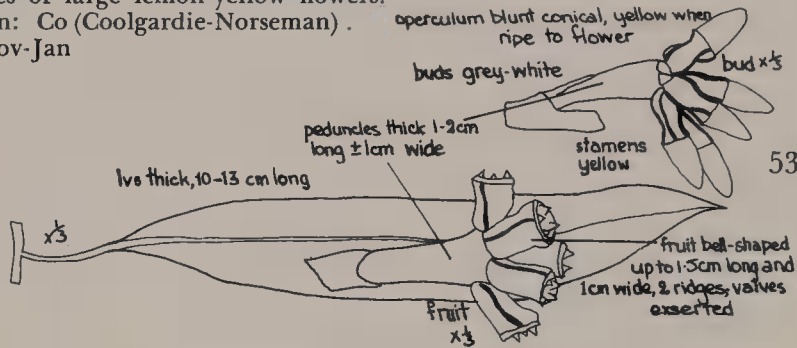
D. Buds relatively large, 2-3 cm long and  $\pm$  1 cm wide.

E. Buds powdery grey-white.

Habit: Tree 6-12 m high, with ■ short thick trunk; bark black and rough at base, smooth reddish-grey or cinnamon-coloured above; masses of large lemon-yellow flowers.

Distribn: Co (Coolgardie-Norseman).

Flg: Nov-Jan



53

***E. stricklandii***  
Strickland Gum  
or  
Yellow-flowered  
Blackbutt

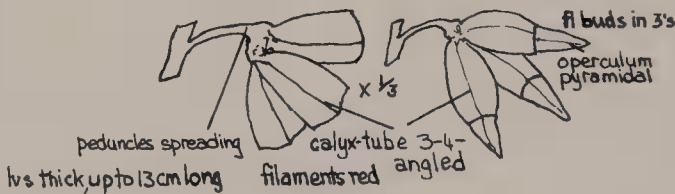
E. Buds red.

Habit: Shrub or mallee up to 2 m high.

Distribn: Ey (C) (Kundip area).

Flg: Sept-Oct

Note. Syn. *E. angulosa* var. *robusta*.



54

***E. erythrandra***  
Rosebud Gum  
(hybrid *E. angulosa*  
 $\times$  *E. tetraptera*)

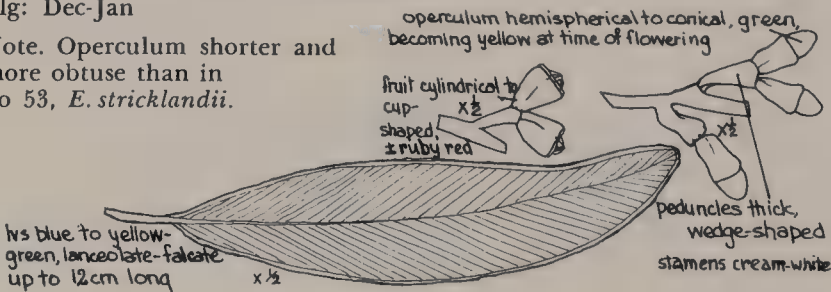
D. Buds small,  $\pm$  1 cm long and 6-9 mm wide.

Habit: Tree up to 6 m high. A blackbutt with rough, dark, persistent bark on lower trunk and smooth, yellowish bark above.

Distribn: An (Sandstone-Meekatharra).

Flg: Dec-Jan

Note. Operculum shorter and more obtuse than in no 53, *E. stricklandii*.



55

***E. carnei***  
Carne's Blackbutt



C. Buds pedicellate on peduncles.

D. Peduncles and pedicels  $\pm$  terete or angular.

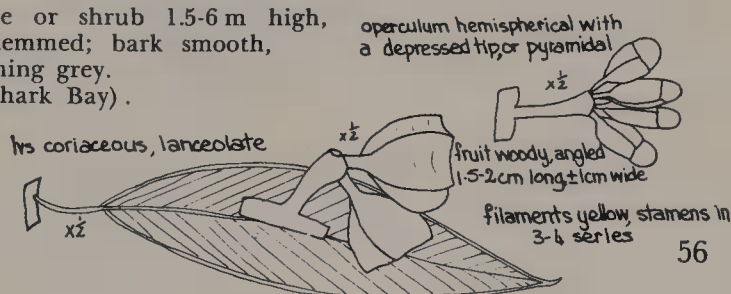
E. Buds very glaucous.

F. Fruits cup-shaped, prominently angled.

Habit: Small tree or shrub 1.5-6 m high, usually many-stemmed; bark smooth, yellowish, becoming grey.

Distribn: Ir (C) (Shark Bay).

Flg: Feb-Mar



56 ***E. roycei***

F. Fruits urn-shaped; 2 of the ribs more prominent.

Habit: Mallee.

Distribn: Le (C) (Hill R., Badgingarra).

Flg: Nov-Dec

Note. It differs somewhat from the more southern form in its quadrangular peduncles and shape and size of fruit.



57 ***E. tetragona***  
(see p. 182)

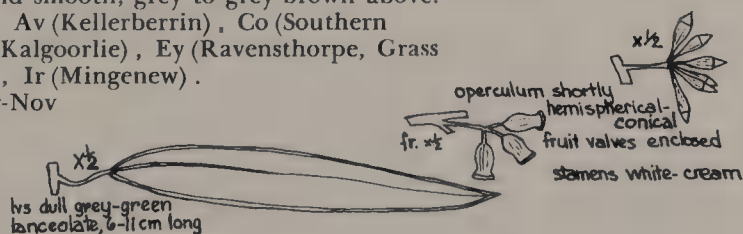
E. Buds not glaucous.

F. Umbels with up to 7 glandular, grey-green buds; fruits urn-shaped.

Habit: Spreading mallee or small tree (3-9 m high), or sometimes a fairly tall tree up to 20 m high. Bark rough, dark grey on lower part and smooth, grey to grey-brown above.

Distribn: Av (Kellerberrin), Co (Southern Cross, Kalgoorlie), Ey (Ravensthorpe, Grass Patch), Ir (Mingenew).

Flg: Aug-Nov



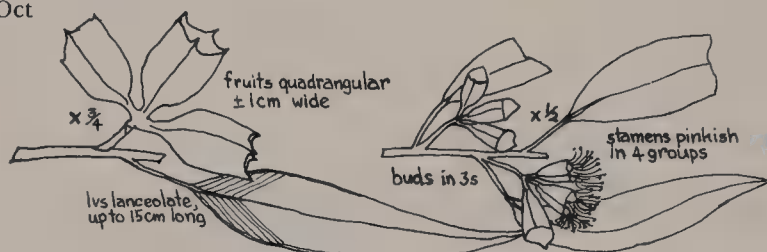
58 ***E. celastroides***  
Mirret

## F. Umbels 3-flowered; fruits quadrangular.

Habit: A mallee up to 3 m high with a small stocking of peeling, rough bark. The bark becomes smooth and grey-brown above.

Distribn: Ir(C) (Murchison R. area between Galena and Wannoo).

Flg: Aug-Oct

58a *E. gittinsii*

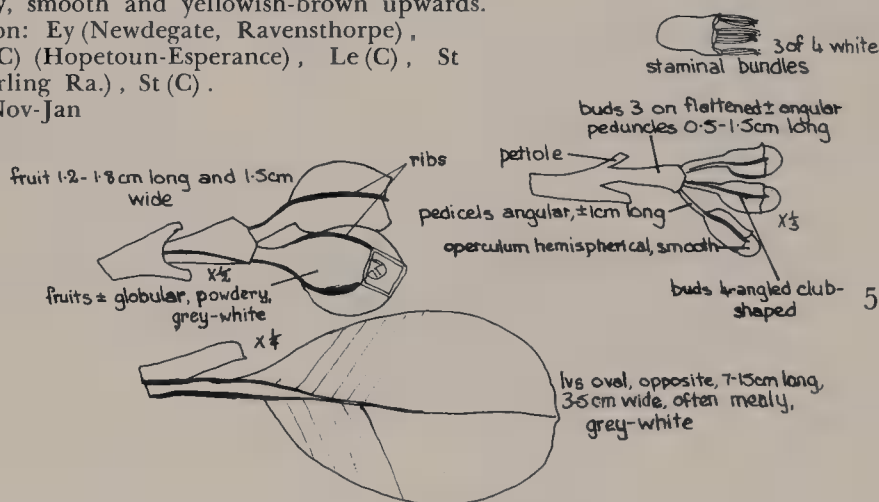
## D. Peduncles flat, broadening towards the top.

## E. Stamens in 4 bundles or tufts; fruits large.

Habit: Mallee 2-3 m high, or occasionally a small tree up to 8 m; lower bark grey and flaky, smooth and yellowish-brown upwards.

Distribn: Ey (Newdegate, Ravensthorpe), Ey(C) (Hopetoun-Esperance), Le(C), St (Stirling Ra.), St(C).

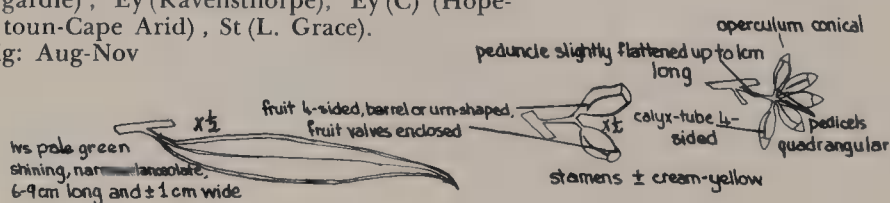
Flg: Nov-Jan

57 *E. tetragona*  
Tallerack or  
White-leaved  
MarlockE. Stamens not in bundles; fruits small ( $\pm$  1 cm long and 5 mm wide).

Habit: Usually a mallee up to 8 m high, but occasionally a tree; bark smooth, dark or whitish-grey.

Distribn: Av (Cowcowing), Co (Merredin, Coolgardie), Ey (Ravensthorpe), Ey(C) (Hopetoun-Cape Arid), St (L. Grace).

Flg: Aug-Nov

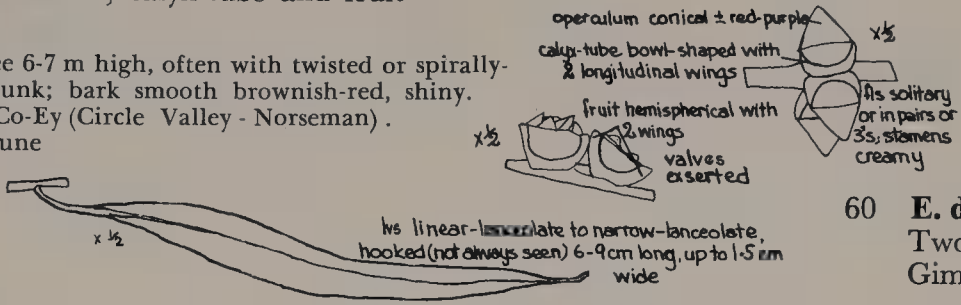
59 *E. calycogona*  
Gooseberry  
Mallee

A. Peduncles absent; calyx-tube and fruit 2-winged.

Habit: Tree 6-7 m high, often with twisted or spirally-fluted trunk; bark smooth brownish-red, shiny.

Distribn: Co-Ey (Circle Valley - Norseman).

Flg: Apr-June



60 ***E. diptera***  
Two-winged  
Gimlet

**Subsection 3**

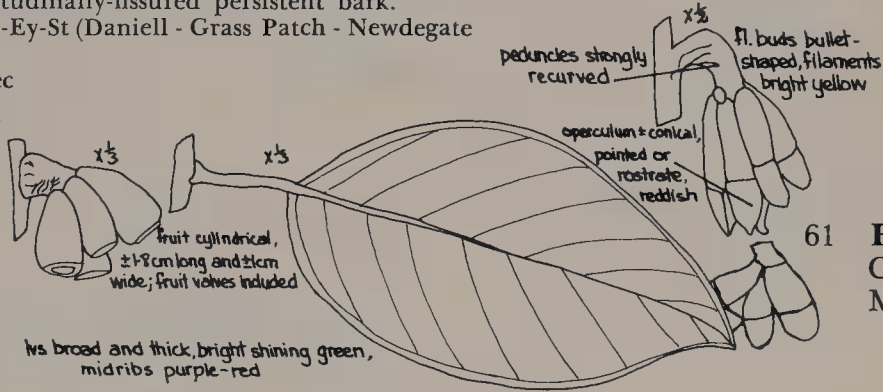
A. Buds closely sessile on peduncles.

B. Peduncles thick, red, round-in-section.

Habit: Mallee 1-3 m high, with widely-spreading thick branches; stem and branches covered with grey longitudinally-fissured persistent bark.

Distribn: Co-Ey-St (Daniell - Grass Patch - Newdegate area).

Flg: Aug-Dec



61 ***E. grossa***  
Coarse-leaved  
Mallee

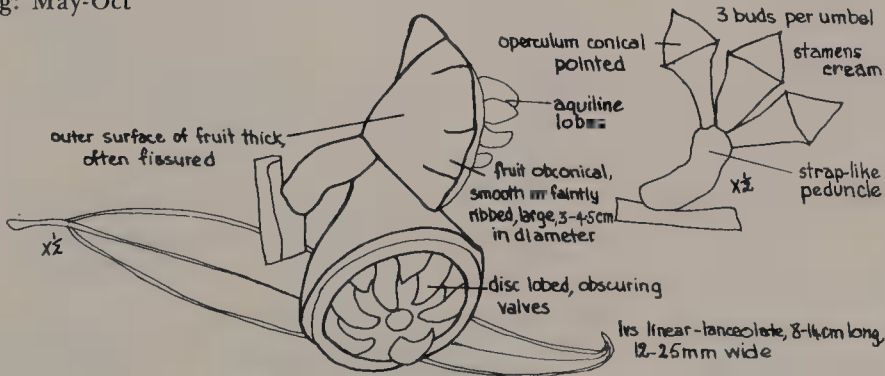
B. Peduncles flattened; 3 buds per umbel.

C. Fruit obconical, large, 3-4.5 cm in diameter.

Habit: Mallee 3-5 m high, with smooth creamy-white or grey bark.

Distribn: Ey (C) (Mt Le Grand, Lucky Bay).

Flg: May-Oct



62 ***E. aquilina***  
Mt Le Grand  
Mallee

- C. Fruit pear-shaped to hemispherical, smooth or slightly ribbed, 1-1.5 cm long and 1.2-1.8 cm wide (cf. the strongly-ribbed fruits of the form on p. 168). Flower-buds in 3s.

Distribn: Ey (Salmon Gums - Circle Valley).

28 ***E. goniantha***  
subsp. ***goniantha***  
[syn. *E. kessellii*]  
(see p. 168)

A. Buds pedicellate on peduncles.

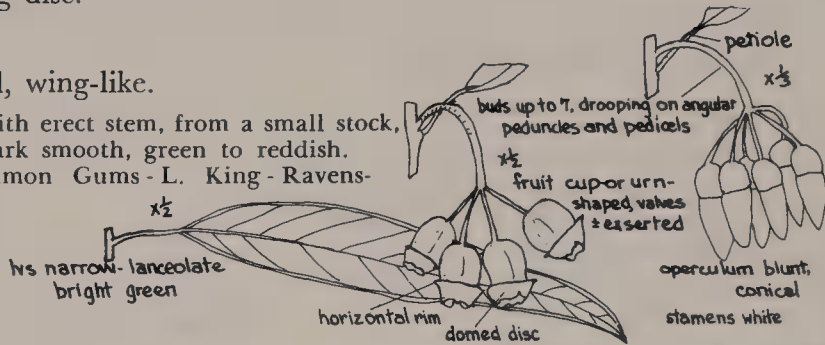
- B. Fruit with collar-like or broad, usually upwardly sloping disc.

- C. Rim horizontal, wing-like.

Habit: Mallee with erect stem, from a small stock, 3-6 m high; bark smooth, green to reddish.

Distribn: Ey (Salmon Gums - L. King - Ravens-thorpe area).

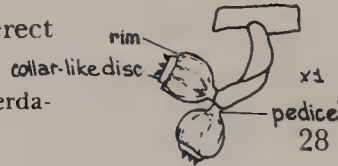
Flg: Nov-Jan



63 ***E. dielsii***  
Cap-fruited Mallee

- C. Rim broad and flat; disc collar-like, erect and projecting above rim.

Distribn: Ey (Salmon Gums area), Ey (C) (Jerdacuttup R. - Dalyup R.).



28 ***E. goniantha***  
subsp. ***goniantha***  
(see pp. 168, 171)

- B. Fruit with a flat, slightly concave or oblique disc.

- C. Fruit, ovoid, top- or bell-shaped; operculum conical, conical-cylindrical or hemispherical.

- D. Fruit 9-10 mm wide; valves exserted.

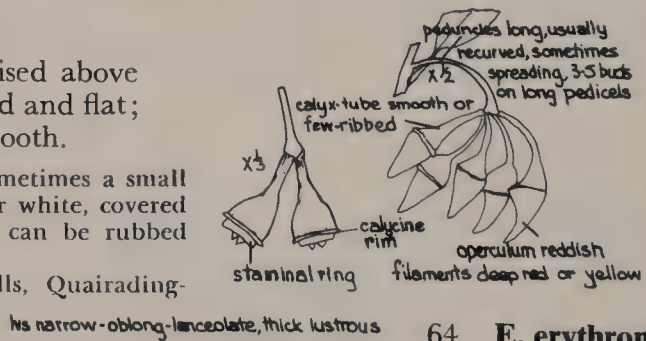
- E. Fruit with staminal ring raised above calyx-tube border; disc broad and flat; operculum conical; bark smooth.

Habit: Usually a mallee but sometimes a small tree 2-6 m high; bark pink or white, covered with a white powder which can be rubbed off.

Distribn: Av, Co (Wongan Hills, Quairading-Southern Cross).

Flg: Nov-Jan

Note. Status change to subspecies foreshadowed.



64 ***E. erythronema***  
var. ***erythronema***  
Red-flowered Mallee

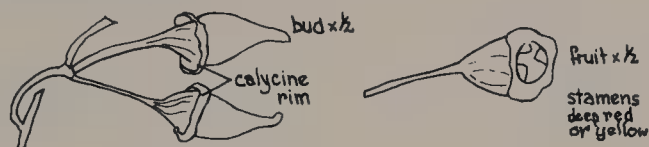


Three buds in the umbel. Calycine rim expanded into a prominent  $\pm$  horizontal wing.

Distribn: Av-Co (Dalwallinu - Manmanning-Beacon) (more northerly occurrence than the species).

Flg: Nov-Jan

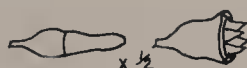
Note. Status change to subsp. *marginata* foreshadowed; Pryor & Johnson 1971.



64a ***E. erythronema***  
var. ***marginata***

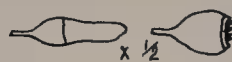
E. Fruit with a distinct flat or convex staminal ring; disc narrow, inwardly sloping; operculum conical-cylindrical. Tall trees.

F. Bark rough; valves large, strongly exserted.



7 ***E. occidentalis***  
Swamp or  
Flat-topped Yate  
(see pp. 158, 159)

F. Bark smooth; valves slender (and less strongly exserted than in *E. occidentalis*).



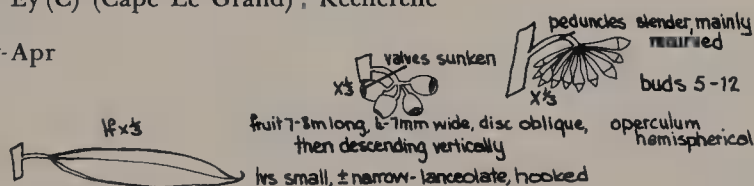
8 ***E. astringens***  
Brown Mallet  
(see p. 159)

D. Fruit small (4-7 mm wide); valves enclosed.

Habit: Mallee 1.5-8 m high, with light-grey or yellowish-green, smooth bark.

Distribn: Ey (C) (Cape Le Grand), Recherche Arch.

Flg: Aug-Apr



65 ***E. insularis***  
Twin Peaks  
Island Mallee

C. Fruit  $\pm$  globular, urn-, flask- or barrel-shaped; operculum hemispherical-conical, obtuse or pointed.

D. Mature leaves alternate; operculum hemispherical, obtuse or with a short point.

(alternate D p. 187)

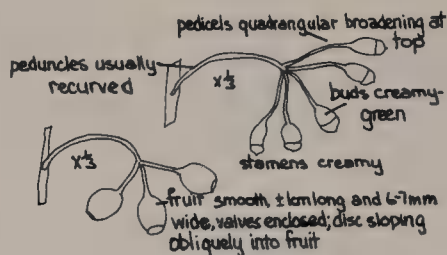
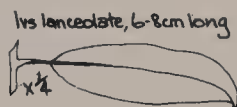
E. Fruit globular or barrel-shaped, smooth or slightly ribbed.

- F. Fruit globular, smooth; buds  $\pm$  7 in the umbel.

Habit: A slender mallee or small tree up to 4 m high, with smooth greyish bark.

Distribn: Ey (C) (Bremer Bay - Esperance), St (Stirling Ra.), St (C).

Flg: Aug-Oct (Mar)



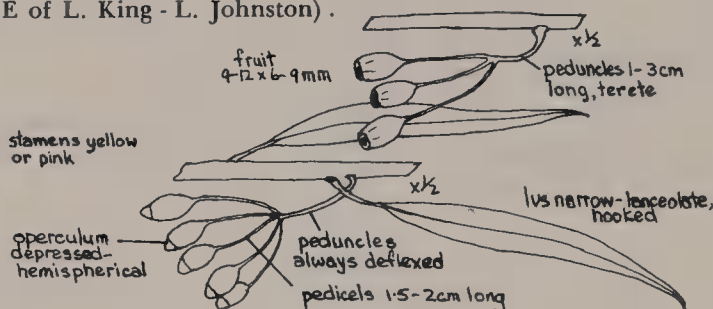
66 ***E. decurva***  
Slender Mallee

- F. Fruit barrel-shaped, smooth or slightly ribbed towards the top; flower-buds 3-7 in the umbel.

Habit: Small mallee up to 3 m high, with smooth grey bark.

Distribn: Co (E-NE of L. King - L. Johnston).

Flg: Apr-Oct



67 ***E. deflexa***  
Lake King Mallee

- E. Fruit flask- or urn-shaped; flower-buds 3-11 in the umbel.

- F. Fruit relatively small (8-10 mm wide); flower-buds numerous (7-11).

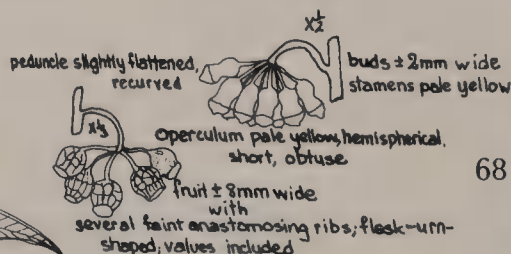
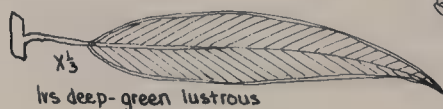
- G. Peduncle fairly short ( $\pm$  1.5 cm); leaves not hooked.

- H. Operculum hemispherical, short, as wide as calyx-tube.

Habit: Densely-branched mallee up to 3 m high, with white smooth bark; branchlets are  $\pm$  quadrangular and purple-red in colour.

Distribn: Ey (C) (Cape Arid area).

Flg: Feb-May



68 ***E. cooperana***  
Many-flowered Mallee

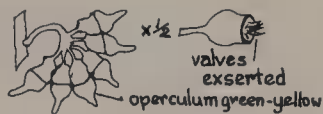


H. Operculum depressed-hemispherical at base, narrowing sharply into a horn or beak; base of operculum wider than calyx-tube.

Habit: Mallee or tree 4-12 m high, with smooth, light-grey bark.

Distribn: See p. 161 for area.

Flg: Sept-Dec



14 ***E. flocktoniae***  
Merrit

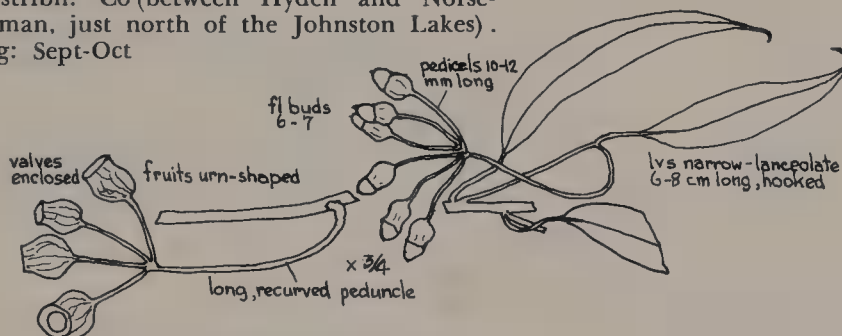
(see p. 161)

G. Peduncle long (2-3 cm); flower-buds  $\pm 7$ ; leaves hooked.

Habit: A mallee to 3 m high with smooth, mottled grey bark.

Distribn: Co (between Hyden and Norseman, just north of the Johnston Lakes).

Flg: Sept-Oct



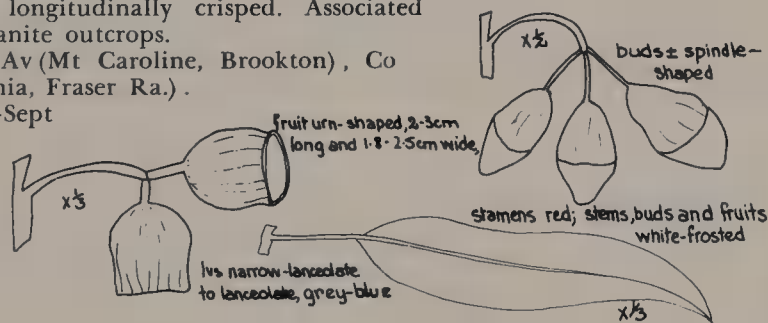
68a ***E. cerasiformis***

F. Fruit large, urn-shaped; flower-buds in 3s.

Habit: Mallee (6 m), or small tree (9 m), with weeping branches; bark smooth, red-brown, longitudinally crisped. Associated with granite outcrops.

Distribn: Av (Mt Caroline, Brookton), Co (Westonia, Fraser Ra.).

Flg: June-Sept



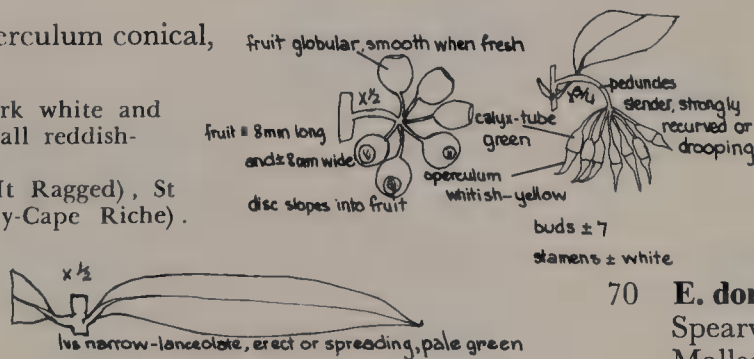
69 ***E. caesia***  
Gungurru

D. Mature leaves opposite; operculum conical, with a long point.

Habit: Mallee 2-4 m high; bark white and smooth and shedding in small reddish-purple flakes.

Distribn: Ey (C) (Esperance, Mt Ragged), St (Stirling Ra.), St (C) (Albany-Cape Riche).

Flg: Aug-Oct



70 ***E. doratoxylon***  
Spearwood  
Mallee

## Subsection 4

- A. Operculum hemispherical, obtuse or umbonate to rostrate.

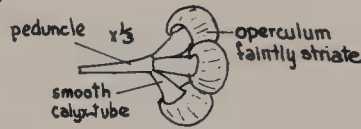
(alternate A p. 191)

- B. Operculum obtuse.

- C. Operculum broader than calyx-tube.

- D. Tree up to 40 m high; buds 2 cm or more long.

Distribn: Da (C) (on coastal limestone).



- 39 ***E. gomphocephala***  
Tuart (see p. 174)

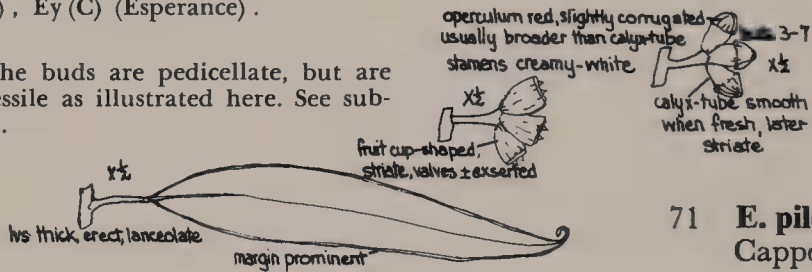
- D. Mallee; buds less than 1 cm long.

Habit: Densely-branched mallee 3-6 m high, with smooth silver-grey bark.

Distribn: Av (Nugadong area), Co (Southern Cross-Boorabbin), Co-Ey (Salmon Gums, Ravensthorpe), Ey (C) (Esperance).

Flg: Dec-Apr

Note. Usually the buds are pedicellate, but are sometimes  $\pm$  sessile as illustrated here. See subsection 6, p. 216.



- 71 ***E. pileata***  
Capped Mallee

- C. Operculum not broader than calyx-tube.

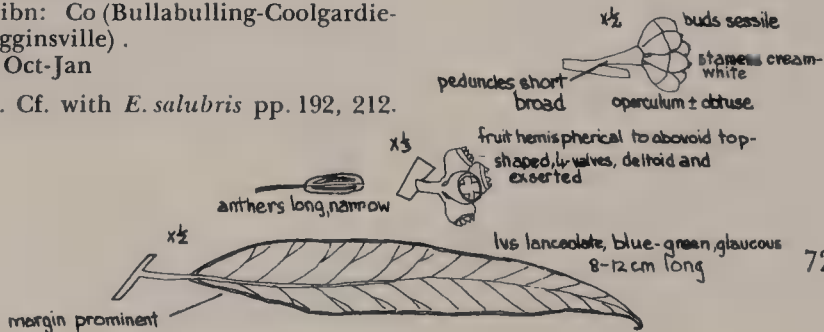
- D. Buds and fruits frosted, powdery-white.

Habit: Tree 8-12 m high; branchlets powdery-white, trunk spirally twisted; bark smooth, reddish-brown.

Distribn: Co (Bullabulling-Coolgardie-Higginsville).

Flg: Oct-Jan

Note. Cf. with *E. salubris* pp. 192, 212.



- 72 ***E. campaspe***  
Silver-topped  
Gimlet

D. Buds and fruits not powdery-white.

E. Tree up to 6 m high; fruit and operculum  
± smooth.



55 **E. carnei**  
(see p. 180)

E. Mallee; fruit slightly ribbed or corrugated.  
(Includes the variant earlier separated as  
*E. kessellii*.)



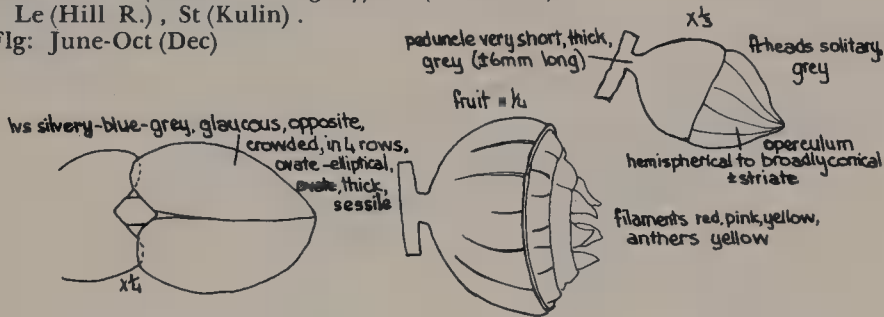
28 **E. goniantha**  
(see pp. 168, 170)

B. Operculum umbonate or rostrate.

C. Valves slightly to strongly exserted.

D. Fruit large, 5-9 cm in diameter.

Habit: Straggling mallee shrub 2-4 m high.  
Distribn: Av (Tammin, Pingelly), Ir (Geraldton),  
Le (Hill R.), St (Kulin).  
Flg: June-Oct (Dec)

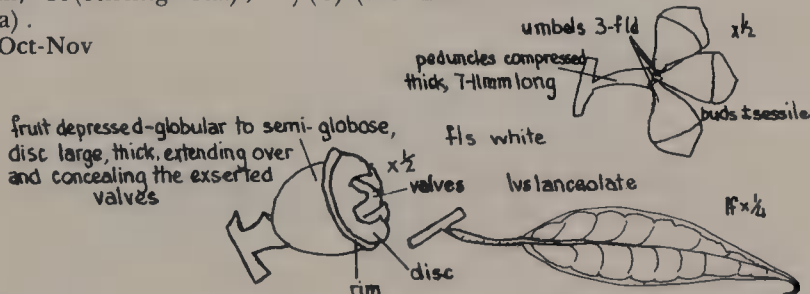


73 **E. macrocarpa**  
Mottlecah

D. Fruit 1-3 cm in diameter.

E. Fruit 2.5-3 cm in diameter; disc incurved,  
covering ± exserted valves.

Habit: Tree-form 12-24 m high, dense crown of  
dark-green leaves; bark white, smooth; mallee  
form 1-3 m high, with dark-green leaves.  
Distribn: Tree form, Da (Jarrahdale), St, St (C)  
(Albany), Wa, Wa (w c) (Yallingup); mallee  
form, St (Stirling Ra.), Ey (C) (Mt Barren  
area).  
Flg: Oct-Nov



74 **E. megacarpa**  
Bullich

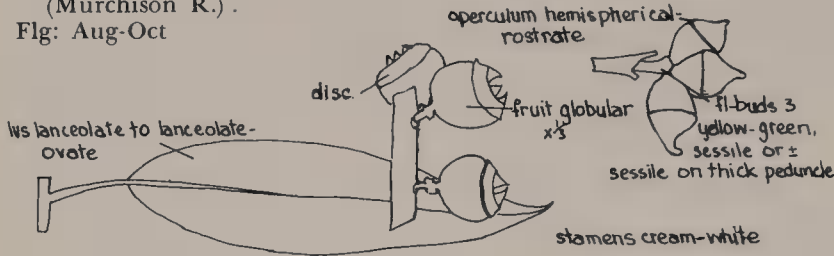
E. Fruit under 2 cm in diameter.

F. Fruit disc dome-shaped; valves uncovered and projecting.

Habit: Mallee 2.5-6 m high; youngest branches reddish; bark smooth, grey-brown.

Distribn: An (Pindar, Menzies), Av (Cowcowing), Co (Coolgardie), Ir (Mingenew), Ir (C) (Murchison R.).

Flg: Aug-Oct



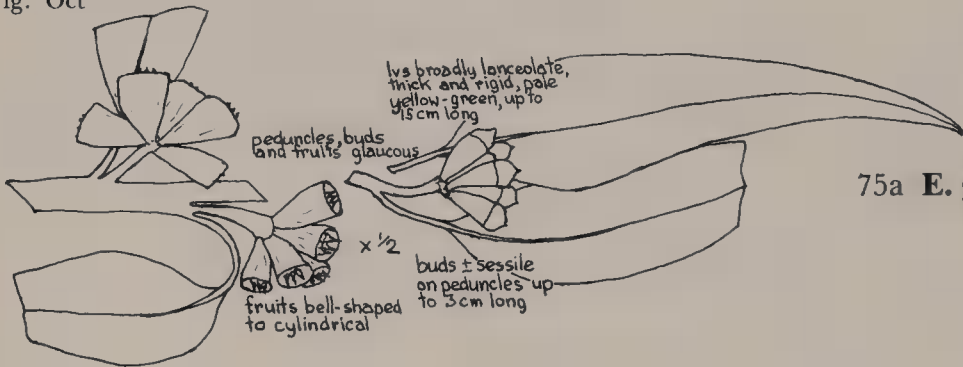
75 ***E. oldfieldii***  
Oldfield's Mallee

F. Fruit not domed; disc sloping inwards; valves slightly exerted.

Habit: Whipstick mallee up to 3 m high with smooth whitish bark.

Distribn: Co (Mt Holland area between Hyden and Norseman).

Flg: Oct



75a ***E. georgei***

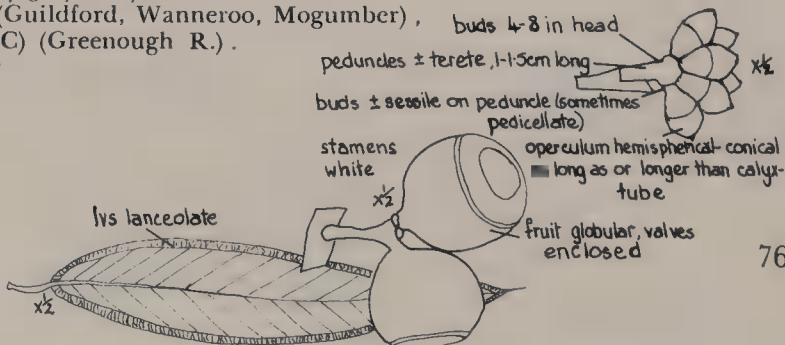
C. Valves enclosed.

D. Fruit 2-2.5 cm in diameter.

Habit: Tree 9-16 m high; bark rough and prickly, ashy-grey to yellow.

Distribn: Da (Guildford, Wanneroo, Mogumber), Le (C), Ir (C) (Greenough R.).

Flg: Feb-Mar



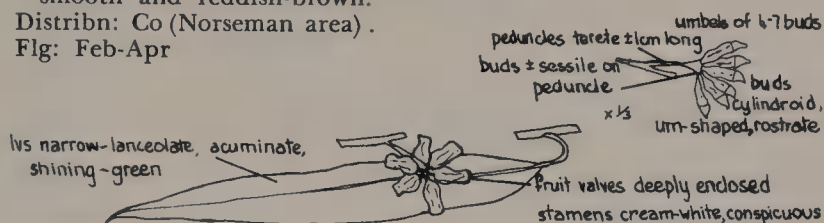
76 ***E. todtiana***  
Prickly Bark or  
Coastal Blackbutt

- D. Fruit 5 mm in diameter, cylindrical, sometimes narrowed in the middle.

Habit: Erectly-branched tree 9-20 m high; bark rough, tessellated,  $\pm$  black for 2-3 m, then smooth and reddish-brown.

Distribn: Co (Norseman area).

Flg: Feb-Apr



77 ***E. dundasii***  
Dundas Blackbutt

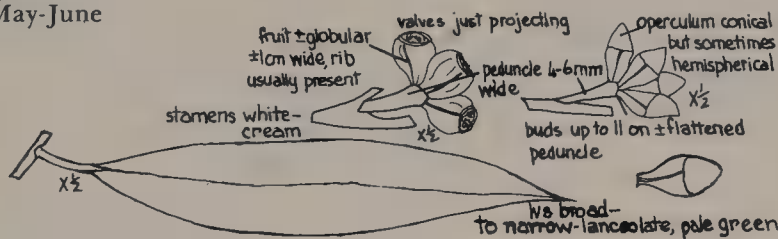
A. Operculum conical or conical-hemispherical.

- B. Fruit usually with 1 rib or angle.

Habit: Smooth-barked mallee 1-3.5 m high.

Distribn: Ey (C) (Bremer Bay - Esperance - Israelite Bay).

Flg: May-June



78 ***E. micranthera***  
Alexander River  
Mallee

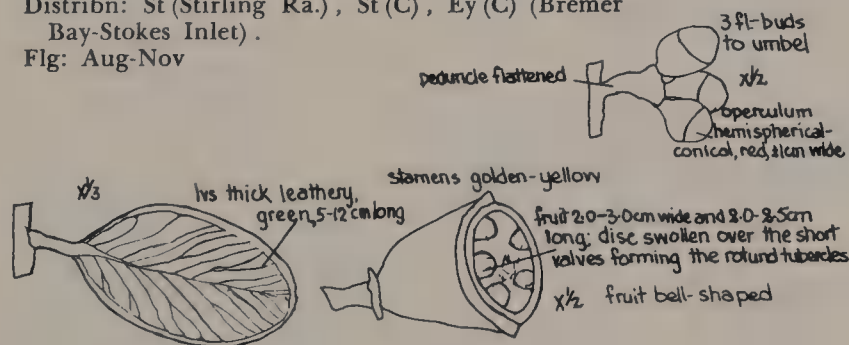
- B. Fruit completely smooth.

- C. Fruit 2-3 cm in diameter.

Habit: Low straggling shrub 1-2 m high, with  $\pm$  opposite, thick, stiff, blunt, grey-green leaves.

Distribn: St (Stirling Ra.), St (C), Ey (C) (Bremer Bay-Stokes Inlet).

Flg: Aug-Nov



79 ***E. preissiana***  
Bell-fruited Mallee

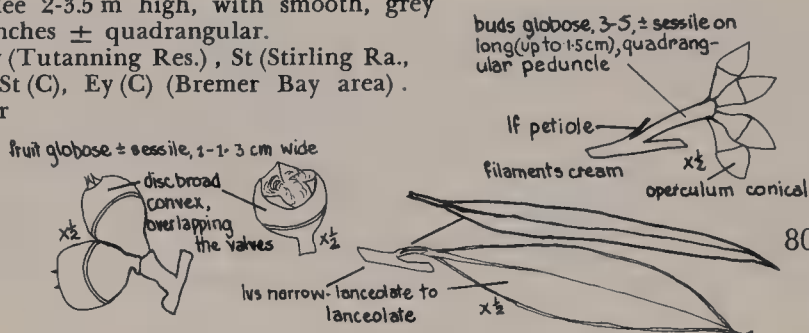
- C. Fruit not above 1.5 cm in diameter.

D. Fruit with prominent incurved dome-like disc.

Habit: Mallee 2-3.5 m high, with smooth, grey bark; branches  $\pm$  quadrangular.

Distribn: Av (Tutanning Res.), St (Stirling Ra., Kalgan), St (C), Ey (C) (Bremer Bay area).

Flg: Feb-Apr



80

***E. pachyloma***  
Kalgan Plains  
Mallee

D. Fruit without dome-like disc.

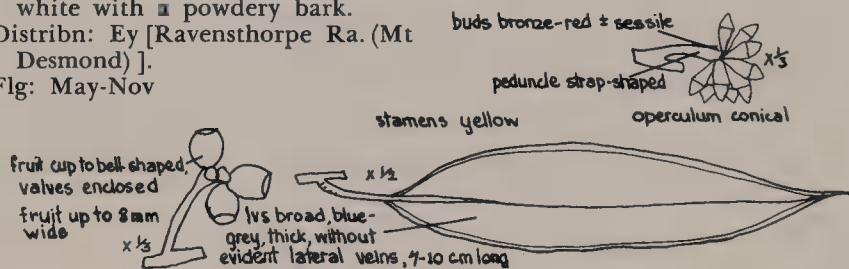
E. Peduncles broad and flat.

F. Mallee with thick lanceolate to elliptic leaves.

Habit: Shrub 3-5 m high, often with flexuose and drooping branches; stems smooth,  $\pm$  white with a powdery bark.

Distribn: Ey [Ravensthorpe Ra. (Mt Desmond)].

Flg: May-Nov



81

***E. desmondensis***  
Desmond Mallee

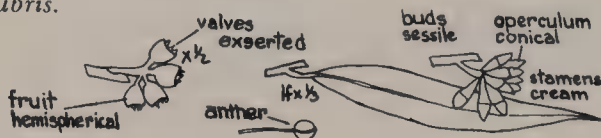
F. Tree with a spirally-fluted (corkscrew-like) trunk and narrow-lanceolate leaves.

Habit: Bark thin, smooth, greenish-red or reddish-brown, shining; upper part of branches and the branchlets are covered with a white powder.

Distribn: An-Co (Menzies area).

Flg: Nov-Dec

Note. Status change foreshadowed to *E. glauca* by Pryor & Johnson (1971). Chippendale (1976) however considers that var. *glauca* is a variant within *E. salubris*.



82

***E. salubris***  
var. ***glauca***  
Blue Gimlet  
(see also p. 212)

E. Peduncles terete or slightly flattened, but not broad.



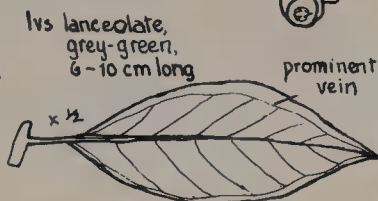
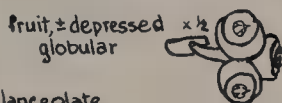
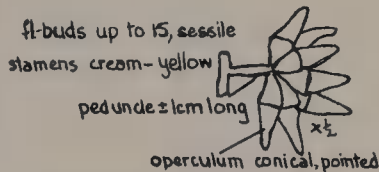
- F. Sturdy tree up to 15 m on coastal limestone; a smaller tree (7-9 m), with twisted and gnarled trunks (Katanning-Denmark), or a tall mallee (Stirling Ra. area).

Habit: As above; bark fibrous, rough and grey; timber deep red.

Distribn: Da (Moore R. - Rockingham), Ey, Ey (C) (Fitzgerald R.), St (Stirling Ra.), St (C), Wa (s c)

Flg: Sept-Jan

Note. The var. *angustifolia* is considered to be a form variant.



83 ***E. decipiens***  
Redheart

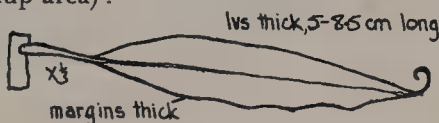
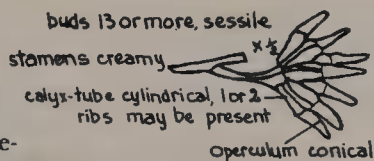
- F. Mallees 1-5 m high.

- G. Leaves usually hooked; flower-buds numerous, orange-red.

Habit: Mallee 1-3 m high; bark smooth, grey.

Distribn: Co (Norseman), Ey, Ey (C) (Hoptoun, Cape Arid), St (Stirling Ra.), St (C), Wa (Manjimup area).

Flg: Feb-Apr



84 ***E. uncinata***  
Hook-leaved  
Mallee

- G. Leaves not hooked; flower buds relatively few (up to 7).

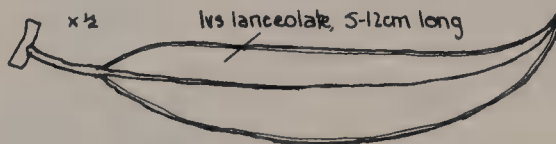
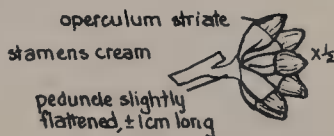
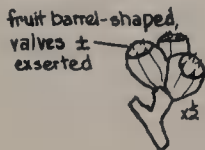
- H. Fruits barrel-shaped.

Habit: Mallee 1-4.5 m high; bark smooth, grey-brown.

Distribn: Co (Norseman), Ey, Ey (C) (Esperance), St (Williams, Stirling Ra.).

Flg: Feb-Apr

Note. Earlier *E. conglobata* var. *anceps*.



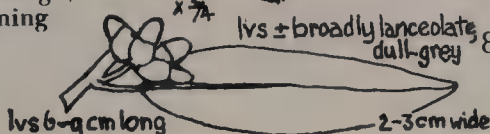
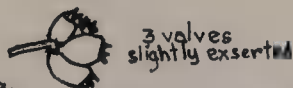
85 ***E. anceps***  
Kangaroo Island  
Mallee

- H. Fruits cylindrical or conical.

Habit: Sparse mallee shrub up to 4 m high, with ± rough bark at base, becoming smooth and pale higher up.

Distribn: An (Laverton), Co (Queen Victoria Spring).

Flg: Aug-Mar



85a ***E. trivalvis***  
Victoria Spring  
Mallee

## Subsection 5

A. Operculum conical or conical-hemispherical.(alternate A p. 200)

## B. Tree form.

(alternate B p. 197)

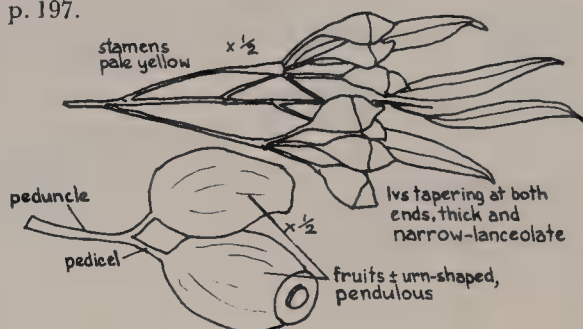
C. Small, slender tree with pendulous branches;  
fruit 2-3 cm long.

Habit: Attains a height of  $\pm$  8 m, with a trunk up to 5 cm in diameter; bark smooth, powdery-white.

Distribn: Ey (C) (Whoogarup Ra. - Hopetoun - Esperance).

Flg: Dec-Feb

Note. For a taxon originally described as *E. sepulcralis* var. *robusta* (later *E. chrysantha*, but now regarded as a hybrid) see p. 197.



86 ***E. sepulcralis***  
Weeping Gum

## C. Stout erect tree.

## D. Peduncles terete or just slightly flattened.

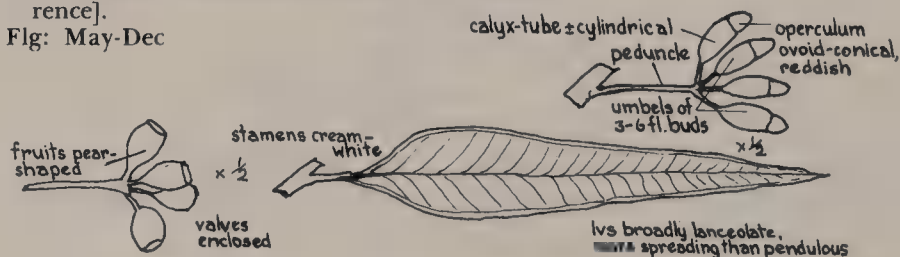
(alternate D p. 196)

## E. Leaves dark green above, much paler underneath.

Habit: Tall gum tree (to 83 m) with a smooth bark, yellowish-white in colour, blotched with pale to dark bluish-grey patches.

Distribn: St (Porongurup Ra.), St (C) (Mt Manypeaks [outlier]), Wa (w c, s c) (Forest Grove - Karridale [outlier] - Cape Leeuwin - Manjimup - Denmark - Albany [main occurrence]).

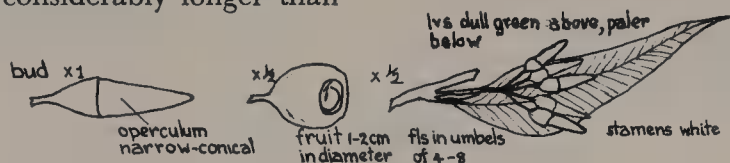
Flg: May-Dec



87 ***E. diversicolor***  
Karri

E. Leaves the same colour above as below,  
or somewhat paler below.

F. Operculum considerably longer than  
calyx-tube.

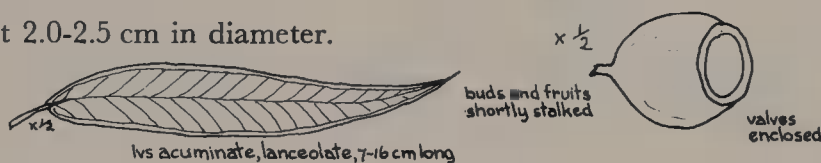


23 ***E. marginata***  
Jarrah (see p. 165)

F. Operculum either shorter than or  $\pm$  as  
long as calyx-tube.



G. Fruit 2.0-2.5 cm in diameter.



76 ***E. tottiana***  
Prickly Bark or  
Coastal Blackbutt  
(see p. 190)

G. Fruit less than 1 cm in diameter.

H. Umbels axillary.

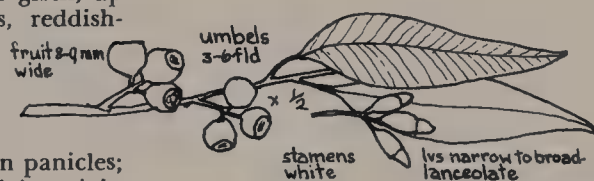
I. Fruit spherical.

Habit: A straight tree of large girth, up  
to 70 m high; bark fibrous, reddish-  
brown.

Distribn: Wa (s c) (Walpole-  
Nornalup area).

Flg: Jan-Feb

Note. Buds and fruits may be in panicles;  
however they are not terminal in origin  
but owe their character to leaf suppres-  
sion.



88 ***E. jacksonii***  
Red Tingle

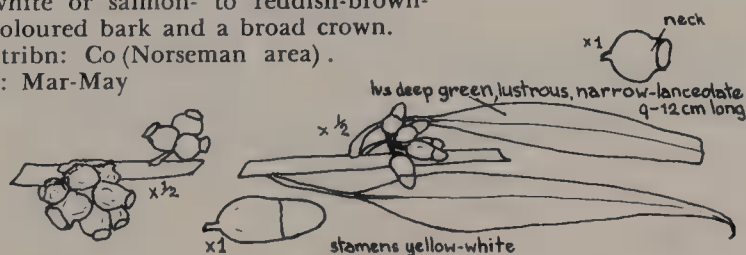
I. Fruit flask-, bell-, or pear-shaped.

J. Fruit flask-shaped ( $\pm$  globular,  
with a short cylindrical neck).

Habit: Tree 15-24 m high, with smooth,  
white or salmon- to reddish-brown-  
coloured bark and a broad crown.

Distribn: Co (Norseman area).

Flg: Mar-May



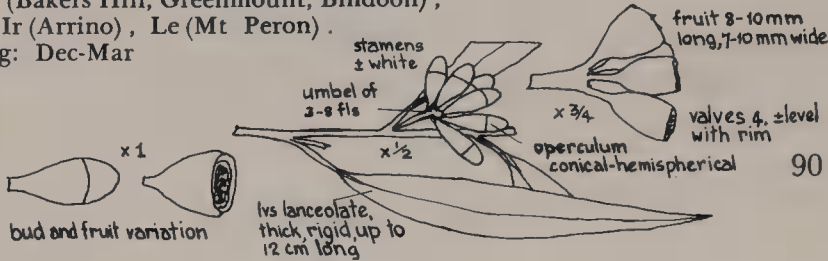
89 ***E. brockwayi***  
Dundas  
Mahogany

J. Fruit bell- to pear-shaped.

Habit: Tree 9-20 m high, with smooth persistent greyish or white bark; talc-like powder present on the trunk.

Distribn: Av (York-Pingelly), Da (Bakers Hill, Greenmount, Bindoon), Ir (Arrino), Le (Mt Peron).

Flg: Dec-Mar



**E. accedens**  
Powderbark  
Wandoo

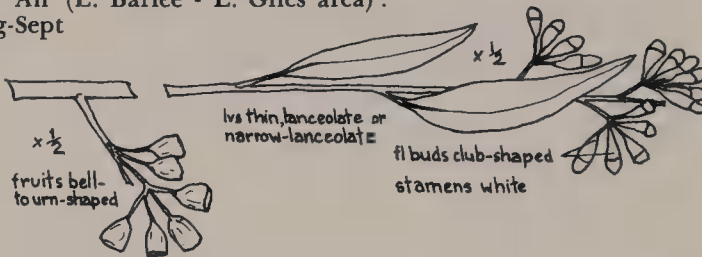
(see p. 215)

H. Inflorescence of short terminal or subterminal panicles, the umbels being 3-6-flowered.

Habit: Tree up to 12 m high; bark rough, persistent to  $\pm$  2 m on trunk.

Distribn: An (L. Barlee - L. Giles area).

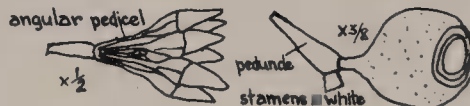
Flg: Aug-Sept



**E. lucasii**  
Barlee Box

D. Peduncles flat, broadening towards apex.

E. Pedicels long and angular; fruit  $\pm$  2.5 cm wide.



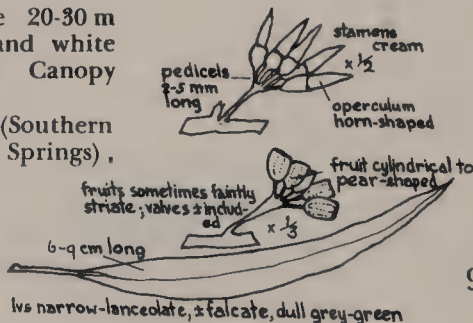
**E. staeri**  
Albany Blackbutt  
(see p. 165)

E. Pedicels short, terete; fruit not more than 1 cm in diameter.

Habit: Small to medium size tree 20-30 m high, with smooth mottled grey and white (sometimes yellow-brown) bark. Canopy wide.

Distribn: Av (Moora, Toodyay), Co (Southern Cross), Da (Kalamunda), Ir (Three Springs), St (Broomehill, Kojonup).

Flg: Oct-Apr



**E. wandoo**  
Wandoo

B. Mallee or shrub up to 5 m high.

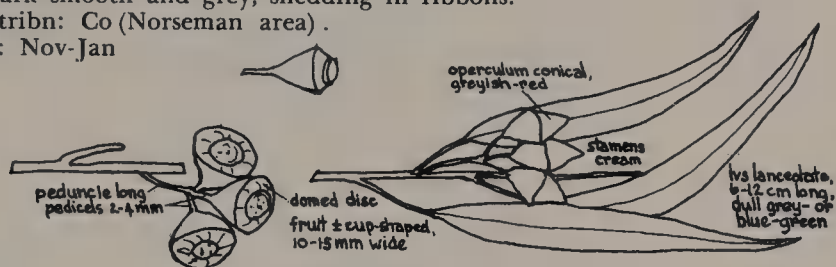
C. Fruit relatively large (1.0-2.5 cm in diameter); calyx-tube (and fruit) urn-shaped or  $\pm$  globular, domed or truncate.

D. Fruit  $\pm$  domed.

Habit: Spreading mallee, usually  $\pm$  3 m high; bark smooth and grey, shedding in ribbons.

Distribn: Co (Norseman area).

Flg: Nov-Jan



93 ***E. diversifolia***  
Soap Mallee

D. Fruit not domed.

E. Fruits urn-shaped or ovoid-urn-shaped.

F. Staminal filaments red.

Habit: Mallee or small tree with weeping branches. Stems, buds and fruits white-frosted; flower-buds  $\pm$  spindle-shaped, sometimes pendent; fruit urn-shaped, up to 2.5 cm wide and 3 cm long; bark red-brown, longitudinally curled.



69 ***E. caesia***  
Gungurru  
(see p. 187)

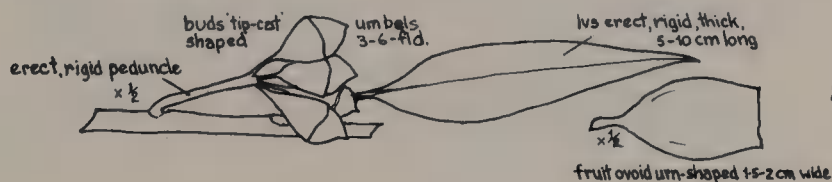
F. Staminal filaments yellow.

Habit: Mallee up to 3 m high, with rigid angular branches.

Distribn: Ey (C) (Mt Bland).

Flg: Nov-Dec

Note. Described originally as *E. sepulcralis* var. *robusta*; it was later given specific rank as *E. chrysantha*, but is now considered to be a hybrid between *E. preissiana* and *E. sepulcralis* (Pryor & Johnson 1971).



86a [***E. chrysantha***]  
(a hybrid)  
(see p. 194)

E. Fruits  $\pm$  hemispherical.

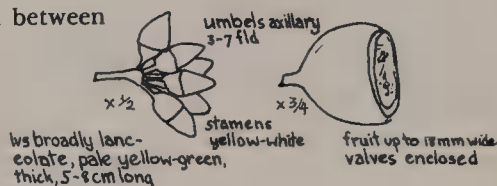
F. Operculum and calyx-tube smooth.

Habit: A slender-stemmed mallee up to 3 m high.

Distribn: St (Kalgan Plains).

Flg: Sept

Note. Now considered to be a hybrid between *E. marginata* and *E. preissiana*.



**[*E. kalganensis*]**  
(a hybrid)

F. Operculum smooth, but calyx-tube ribbed or striate.



47 ***E. ligulata***  
Lucky Bay  
Mallee

(see p. 177)

C. Fruits not above 1 cm in diameter.

D. Buds 1-1.5 cm long.

E. Buds and fruits on short pedicels.

Habit: Mallee 1-4.5 m high; bark light brown to grey-brown, peeling in ribbons.

Distribn: Av (Cunderdin), Co (Southern Cross-Norseman), Ey (Ravensthorpe), Ey (C) (Hopetoun), Ir (Northampton), St (Porongurup Ra.), St (C) (Cape Riche).

Flg: Dec-Mar

Note. A mallee or small tree growing in the Hutt River area, with smooth black bark and broader leaves (earlier known as var. *melanophloia*) is now considered to be within the normal variation of *E. redunca* var. *redunca*.



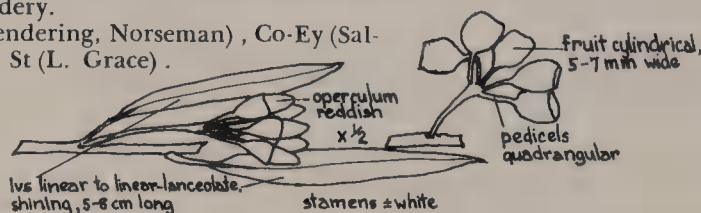
20 ***E. redunca***  
Black Marlock  
(see pp. 164, 223)

E. Buds and fruits on long pedicels.

Habit: Slender mallee up to 4.5 m high; bark smooth, powdery.

Distribn: Co (Bendering, Norseman), Co-Ey (Salmon Gums), St (L. Grace).

Flg: Jan-Mar



94 ***E. cylindriflora***  
White Mallee



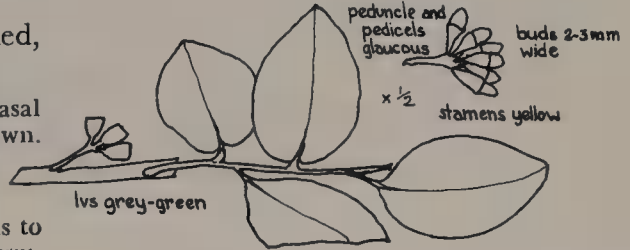
D. Buds up to 1 cm long (usually 6-8 mm).

E. Leaves broad-ovate or cordate-orbicular.

F. Leaves mainly alternate, shortly-stalked, broad-ovate.

Habit: Straggling mallee 3-3.5 m high; basal bark rough, becoming smooth, grey-brown.  
Distribn: Co (Norseman area, on granite outcrops).  
Flg: June-Sept

Note. Pryor & Johnson (1971) consider this to be a hybrid between *E. kruseana* and *E. ovularis*, but Chippendale (1976) accepts it as the name of a species and not as a hybrid. He suggests (1973) that it may prove to be a variety of *E. kruseana* (no. 96).



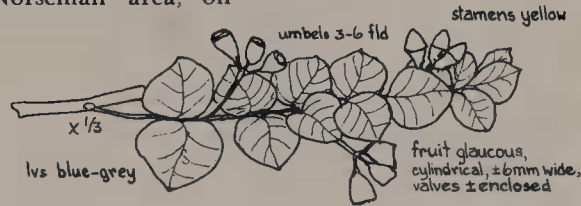
95 ***E. brachyphylla***

F. Leaves opposite, sessile, cordate-orbicular.

Habit: Mallee up to 2.5 m high; bark smooth, ± grey in colour.

Distribn: Co (Kalgoorlie-Norseman area, on granite outcrops).

Flg: Apr-July



96 ***E. kruseana***  
Bookleaf Mallee

E. Leaves lanceolate or narrow- to linear-lanceolate.

F. Operculum shortly- or broadly-conical, sometimes shorter than the calyx-tube.

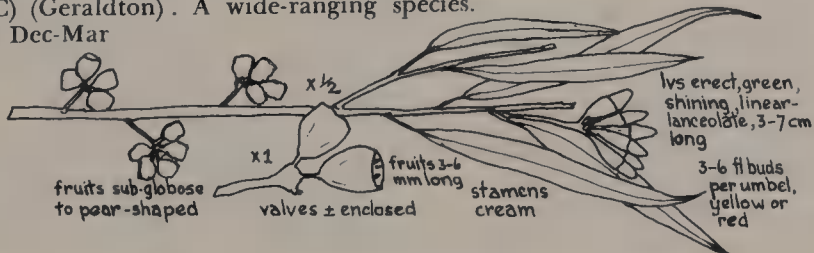


G. Fruit 3-6 mm long and as wide, hemispherical to subglobose.

Habit: Usually a mallee 2-5 m high with several erect twiggy branches. Occasionally a tree to 9 m; bark smooth, grey-brown.

Distribn: Av (Kellerberrin, Cowcowing), Co (Coolgardie), Da (Spearwood), Ey, Ir, Ir (C) (Geraldton). A wide-ranging species.

Flg: Dec-Mar



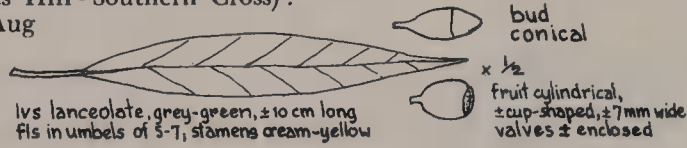
97 ***E. foecunda***  
Narrow-leaved  
Red Mallee

G. Fruit  $\pm$  8 mm long and slightly less wide.

Habit: Mallee (3-4 m high) or tree (up to 8 m high), with smooth pale yellow-brown bark which sheds in ribbon-like flakes.

Distribn: Av (Wyalkatchem-Kellerberrin), Co (Hines Hill - Southern Cross).

Flg: Mar-Aug



98 ***E. sheathiana***  
Ribbon-barked  
Gum  
(see p. 202)

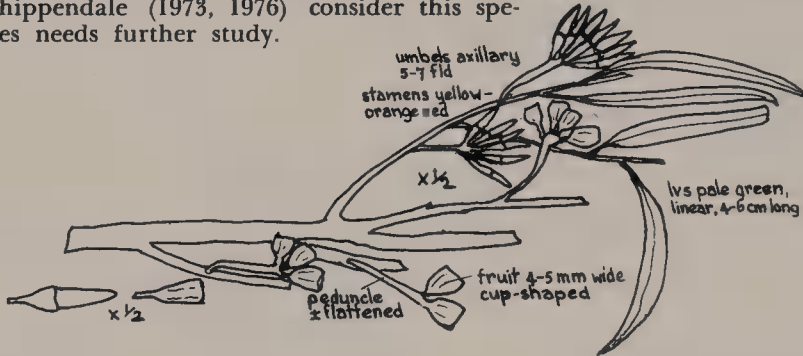
F. Operculum long, narrow-conical or horn-shaped, longer than the calyx-tube.

Habit: Mallee or small tree. Rare.

Distribn: Ey (Ravensthorpe area).

Flg: Nov, Feb-Mar

Note. Both Pryor & Johnson (1971) and Chippendale (1973, 1976) consider this species needs further study.



99 ***E. xanthonema***  
Yellow-flowered  
Mallee

A. Operculum  $\pm$  hemispherical, often rostrate.

B. Flowers in axillary umbels.

(alternate B p. 210)

C. Trees, usually tall, stout and erect; sometimes straggling.

(alternate C p. 203)

D. Fruit 7-16 mm wide.

(alternate D p. 202)

E. Leaves dark green above, much paler below.

F. Buds shortly pedicillate; operculum much shorter than calyx-tube.

Habit: Tall tree up to 83 m high, with smooth yellowish-white bark.



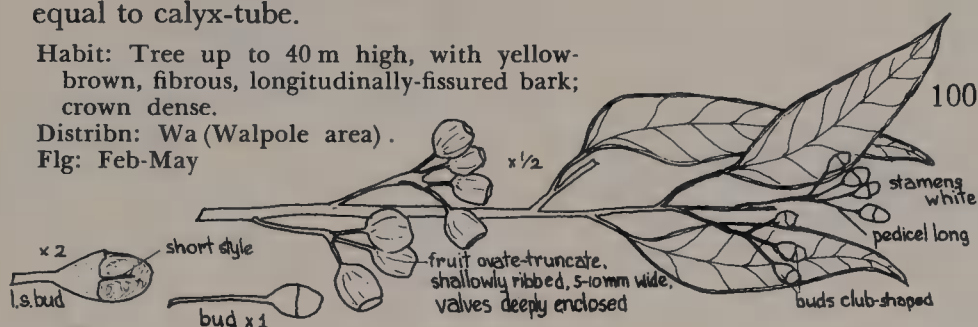
87 ***E. diversicolor***  
Karri  
(see p. 194)

F. Buds on long pedicels; operculum  $\pm$  equal to calyx-tube.

Habit: Tree up to 40 m high, with yellow-brown, fibrous, longitudinally-fissured bark; crown dense.

Distribn: Wa (Walpole area).

Flg: Feb-May



**E. brevistylis**  
Rates Tingle

E. Leaf colour  $\pm$  the same on both upper and lower surfaces.

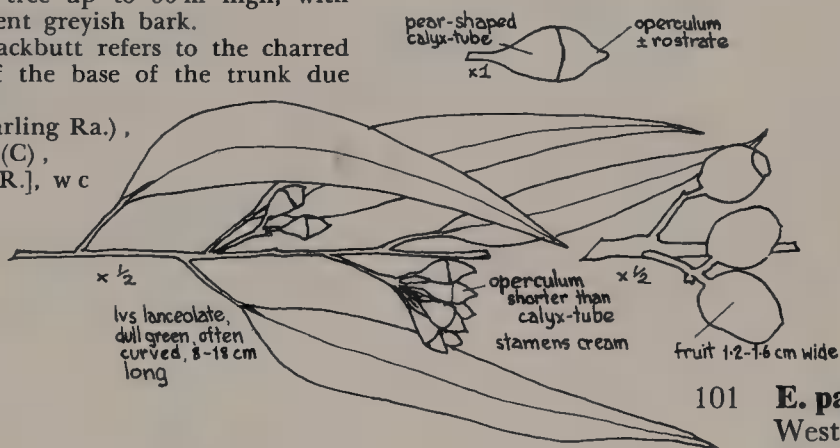
F. Calyx-tube pear-shaped.

Habit: A large tree up to 50 m high, with rough, persistent greyish bark.

The name blackbutt refers to the charred appearance of the base of the trunk due to forest fires.

Distribn: Da (Darling Ra.),  
Da (C), St, St (C),  
Wa (s c [Kent R.], w c  
[Yallingup]).

Flg: Nov-Feb



**E. patens**  
Western Australian  
Blackbutt

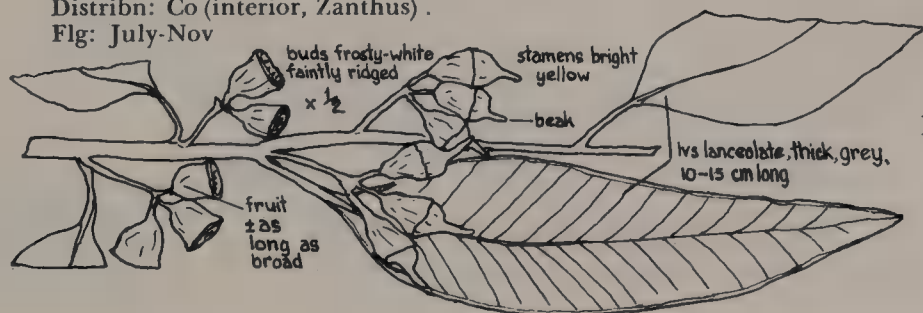
F. Calyx-tube bell-shaped or cup-shaped.

G. Operculum hemispherical, abruptly contracted into a long or short, usually curved beak; fruit 8 mm-1.5 cm wide.

Habit: Straggling tree up to 15 m high, with smooth grey-white or pinkish-white bark. Rough scaly bark may be present at the base of the trunk.

Distribn: Co (interior, Zanthus).

Flg: July-Nov



**E. woodwardii**  
Lemon-flowered  
Gum

- G. Operculum hemispherical blunt or with a short point; fruit 7-10 mm wide.



H. Stamens in a ring.

Habit: Tree up to 8 m high; bark smooth, pale yellow-brown, deciduous in long ribbon-like flakes. Stems very susceptible to termite attack.

Distribn: Av (Wyalkatchem), Co (Southern Cross).

Flg: Mar-Aug



98

***E. sheathiana***  
Ribbon-barked  
Gum

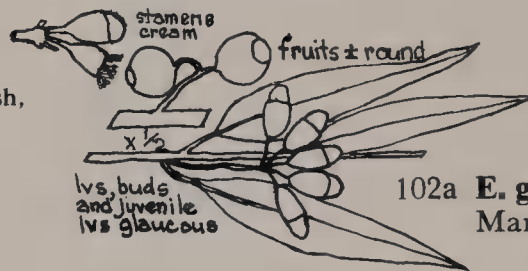
(see also p. 200)

H. Stamens in 4 clusters.

Habit: Tree 7-12 m high; bark white.

Distribn: An (Sandstone, Laverton), Ash,  
Co (Queen Victoria Spring).

Flg: Sept-Dec



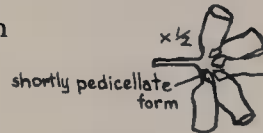
102a

***E. gongylocarpa***  
Marble Gum

- D. Fruit small, ± 5 mm wide.

- E. Fruit cylindrical, sometimes narrowed in the middle.

Habit: Erectly-branched tree 9-20 m high.

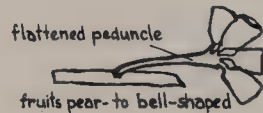


77

***E. dundasii***

(see p. 191)

- E. Fruit ovoid-urn-shaped or pear-shaped to bell-shaped, truncate.

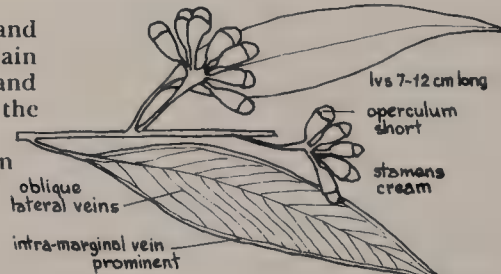


- F. Peduncle slightly flattened, 1-1.5 cm long.

Habit: Tree 6-13 m high, with rough and persistent grey bark on trunk and main branches, (except subspecies *gratieae*), and growing in higher rainfall areas than the mallee form which is smooth-barked.

Distribn: An (L. Barlee), Av (York, Wongan Hills), Co (Merredin, Coolgardie), Ir (Mingenew), Ir (C) (Geraldton), St (Narrogin).

Flg: Sept-Dec



103

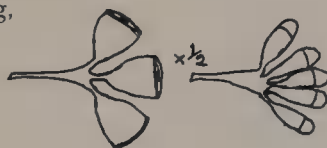
***E. loxophleba***  
subsp. ***loxophleba***  
York Gum

Note. The var. *fruticosa* Benth. (shrub with broader leaves, larger flowers and more flattened peduncles, Murchison R.) is a minor variant (Pryor & Johnson 1971), or cline form (Brooker 1972).

Habit: Tree with a smooth trunk and a fairly dense canopy of bright-green leaves; leaves thicker and buds and fruit larger than in the typical subspecies.

Distribn: Ey (L. King), St (Dumblenyung, L. Grace).

Flg: Oct-Mar



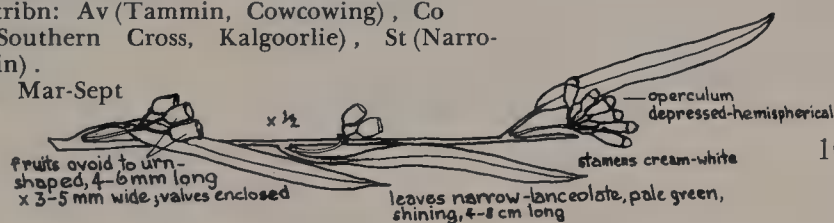
103a ***E. loxophleba***  
subsp. ***gratiae***  
Lake Grace Gum

**F. Peduncle compressed, 3-10 mm long.**

Habit: Spreading tree up to 18 m high; lower bark rough and flaky, dark; upper bark smooth and grey.

Distribn: Av (Tammin, Cowcowing), Co (Southern Cross, Kalgoorlie), St (Narrogin).

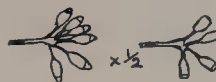
Flg: Mar-Sept



104 ***E. gracilis***  
var. ***gracilis***  
Snap-and-rattle  
or Yorrell

Buds and fruits smaller than in the typical species.

Note: Pryor & Johnson (1971) foreshadow a status change to subsp. *yilgarnensis*. Chippendale (1976) however, considers it to be a variant only of the species.



104a ***E. gracilis***  
var. ***yilgarnensis***

**C. Mallees (many-stemmed shrubs) ; sometimes a small tree.**

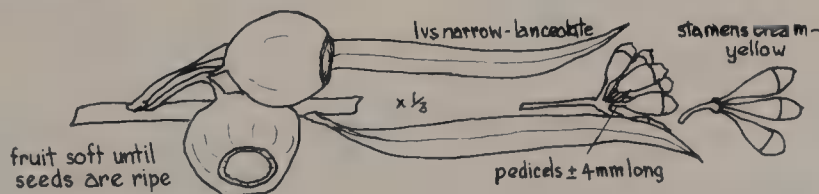
**D. Fruit relatively large, 1.2-3 cm in diameter.**

**E. Fruit globular, 2-3 cm in diameter, narrowing to the orifice which is  $\pm$  1 cm wide.**

Habit: Mallee up to 3 m high (occasionally to 6 m), with a smooth yellowish to grey bark.

Distribn: Ey (C) (Bremer Bay), St (Stirling Ra.), Wa (C) (Geographe Bay).

Flg: June-Nov



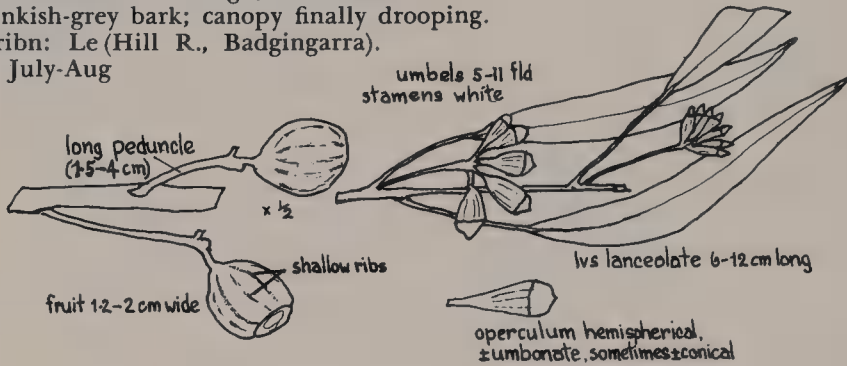
105 ***E. buprestium***  
Apple Mallee



E. Fruit ovoid, globose or cylindrical,  $\pm 1.2$  (rarely up to 2) cm in diameter; orifice fairly narrow.

F. Buds and fruits shallowly ribbed.

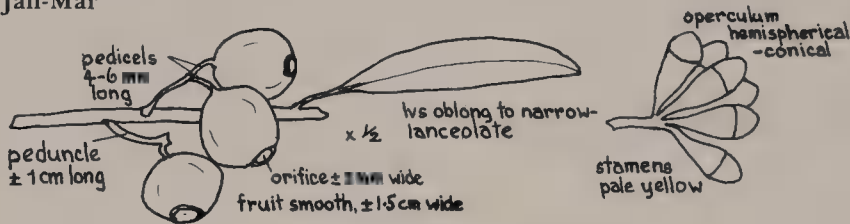
Habit: Mallee 2-5 m high, with smooth pinkish-grey bark; canopy finally drooping.  
Distribn: Le (Hill R., Badgingarra).  
Flg: July-Aug



106 **E. pendens**  
Badgingarra  
Mallee

F. Buds and fruits smooth.

Habit: Mallee up to 3.5 m high (occasionally a small tree up to 7 m high), with rough, fibrous grey bark on lower parts.  
Distribn: An-Ir (Mullewa area), Ir (C) (Greenough R., Kalbarri).  
Flg: Jan-Mar



107 **E. jucunda**

D. Fruit normally less than 1.2 cm in diameter.

E. Fruit of medium size, mostly 6 mm-1 cm in diameter.

(alternate E p. 208)

F. Fruit cup-, globose-, cylindrical-, pear- or barrel-shaped.

(alternate F p. 207)

G. Operculum smooth.

(alternate G p. 207)

H. Leaves narrow-lanceolate to lanceolate.

(alternate H p. 207)

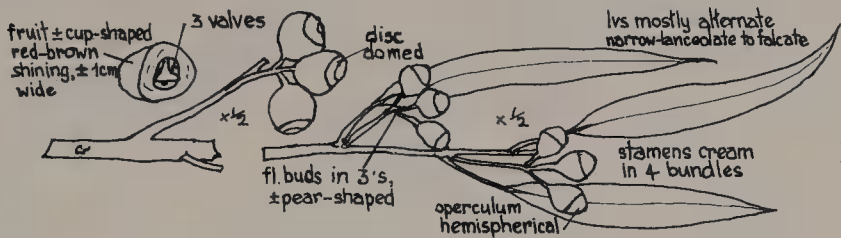


I. Fruit domed with a broad convex disc.

Habit: Mallee (3-6 m high) or occasionally a small tree up to 9 m high; bark either rough at the base, becoming smooth higher up, or all smooth and light brown.

Distribn: An (Menzies), Av (Wongan Hills), Co (Kalgoorlie), Ir (Mingenew).

Flg: Sept-Nov



108 ***E. ebbanoensis***  
Sandplain Mallee

I. Fruit not domed; disc slopes obliquely or vertically into the fruit.

J. Rim of fruit broad; staminal ring narrow and raised.

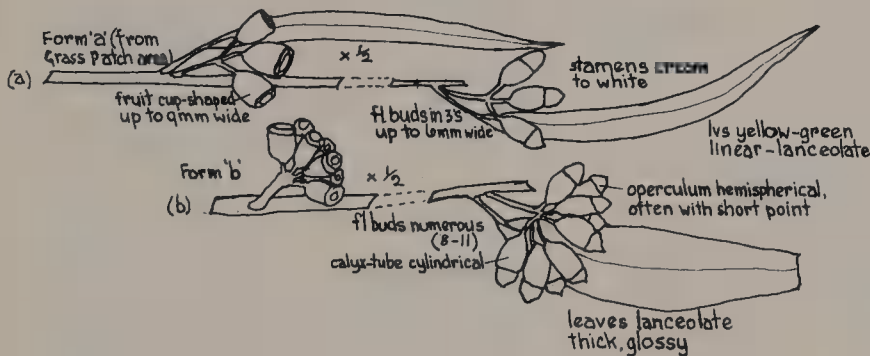
Habit: Slender mallee up to 3 m high, with smooth, grey bark.

Distribn: Co, Ey, Ey (C).

Flg: Aug-Dec

Note. Form 'b' (from Norseman and Newdegate areas) was earlier separated as *E. scyphocalyx*. See Chippendale (1973).

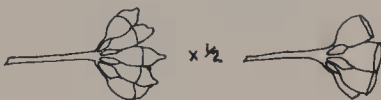
See p. 177, no 48.



109 ***E. merrickiae***  
Goblet Mallee

J. Rim of fruit narrow; staminal ring narrow but not raised.

K. Bark smooth, light grey or brown, shedding in ribbons; branchlets glaucous.



98 ***E. sheathiana***  
(see pp. 200, 202)

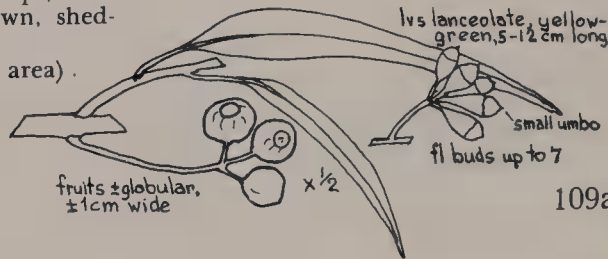
K. Bark rough low on the stem and either rough or smooth above, greyish in colour.

L. Fruit  $\pm$  globular.

Habit: A mallee up to 2 m high, forming dense broad clumps; bark slightly rough, grey-brown, shedding in strips.

Distribn: Ir (C) (Eneabba area).

Flg: Oct-Feb



109a *E. johnsoniana*

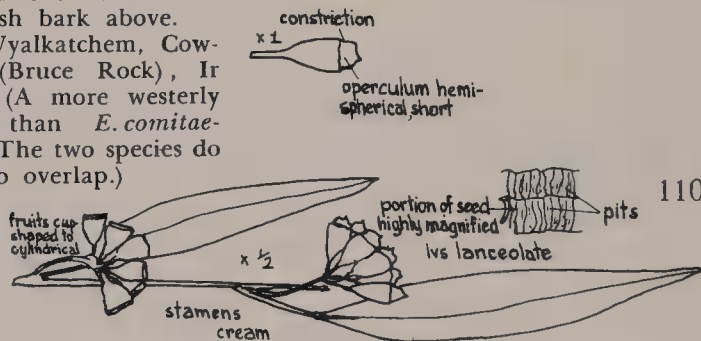
L. Fruit  $\pm$  cylindrical.

M. Buds constricted at the join of the operculum. Seeds brown with shallow elongated pits.

Habit: Mallee (sometimes a small tree) up to 6 m high with rough bark low on the stems and smooth, greyish bark above.

Distribn: Av (Wyalkatchem, Cowcowing), Co (Bruce Rock), Ir (Perenjori). (A more westerly distribution than *E. comitae-vallis* below. The two species do not appear to overlap.)

Flg: Apr-Dec



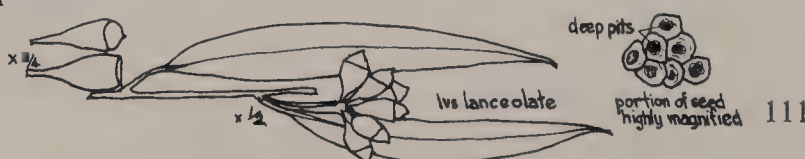
110 *E. brachycorys*†  
Cowcowing Mallee

M. Buds not constricted at the join of the operculum. Seeds grey with deep,  $\pm$  hexagonal pits.

Habit: As for preceding species.

Distribn: An-Co (Leonora - Comet Vale - Kalgoorlie area).

Flg: Apr-Dec



111 *E. comitae-vallis*†  
Comet Vale Mallee

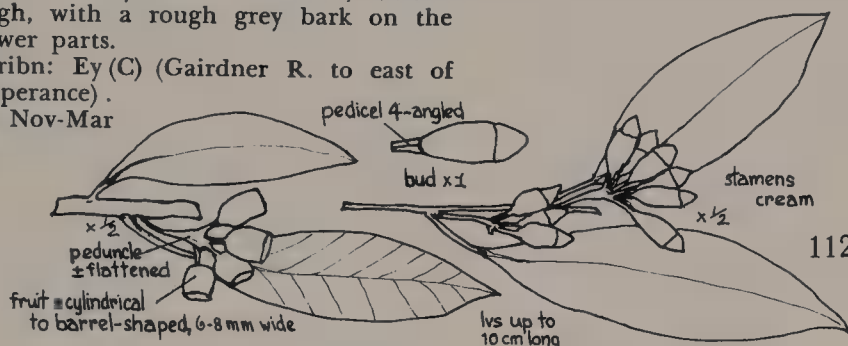
† These two species are retained following Brooker (1974).

- H. Leaves elliptical to broad-lanceolate, thick, erect, shining.

Habit: Densely-branched mallee, 2-3.5 m high, with a rough grey bark on the lower parts.

Distribn: Ey (C) (Gairdner R. to east of Esperance).

Flg: Nov-Mar



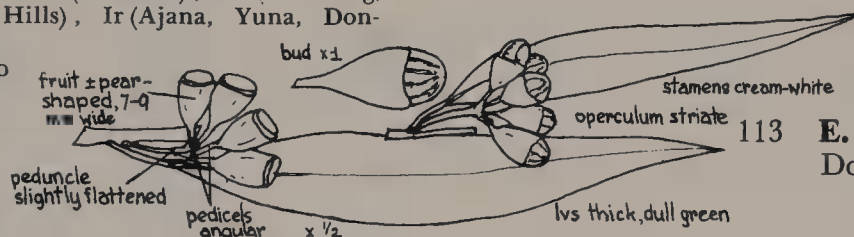
***E. leptocalyx***  
Hopetoun Mallee

- G. Operculum faintly ribbed, striate or wrinkled (at least when dry).

Habit: The species varies from a mallee to a small tree (2-8 m high), with a ribbon bark in the lower parts of the trunk, but white and smooth upwards.

Distribn: An, Ir (Mullewa), Av (Walebing, Wongan Hills), Ir (Ajana, Yuna, Dongara).

Flg: Jan-Feb



***E. dongarraensis***  
Dongara Mallee

- F. Fruit 4-sided or globular-truncate or ± urn-shaped.

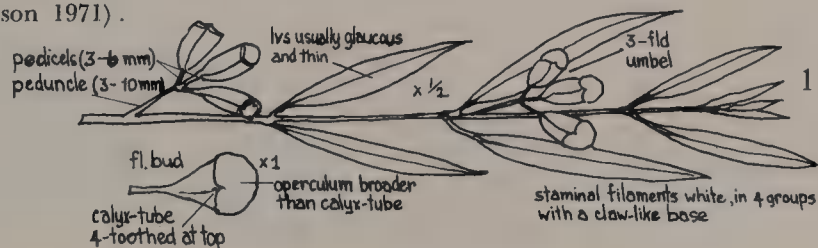
- G. Leaves mostly opposite; flower buds in 3s; fruits 4-sided.

Habit: Bushy mallee 2-3 m high; rarely a small tree; bark near base dark grey, becoming light or yellowish-pink and smooth higher up.

Distribn: An, Ir (Mullewa area), Av (Moora-Wongan Hills), Da (Mogumber), Ir, Le.

Flg: Jan-Apr

Note. A somewhat variable species. The var. *globosa*, with globose, shining fruit is considered to be a minor variant (Pryor & Johnson 1971).



***E. eudesmioides***  
Mallalie

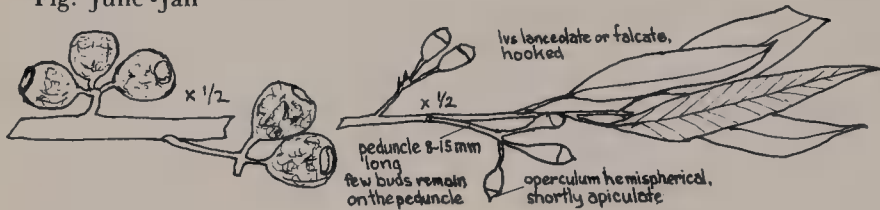
G. Leaves mostly alternate; flower buds in umbels of up to 11; fruits  $\pm$  globular-truncate or urn-shaped.

H. Fruit  $\pm$  10 (rarely up to 14) mm in diameter, globular-truncate; peduncles  $\pm$  erect.

Habit: Mallee with slender erect stems up to 6 m high; bark smooth, pinkish-grey to light grey.

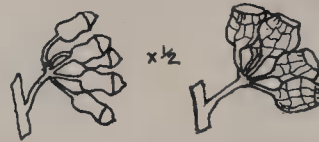
Distribn: Av (Brookton, Boyagin), Da (Mundaring), St (Wickepin).

Flg: June-Jan



115 ***E. exilis***  
Boyagin Mallee

H. Fruit 6-8 mm in diameter, flask- or urn-shaped; peduncles spreading, sometimes drooping.



68 ***E. cooperana***  
Many-flowered  
Mallee (see p. 186)

E. Fruit small, mostly 5 mm or less in diameter.

F. Base of trunk (for 1-2 m) covered with rough bark.

(alternate F p. 210)

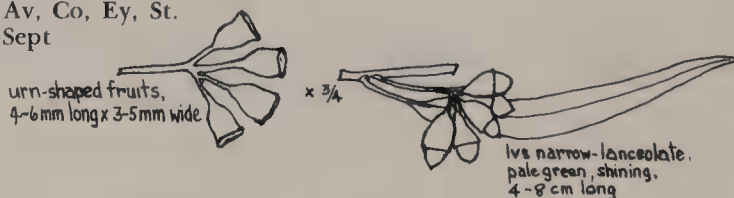
G. Base of trunk covered with rough, grey flaky bark; upper part smooth, grey or red-brown. Present in inland (Co) and some south-western botanical districts.

H. Operculum depressed-hemispherical,  $\pm$  half as long as calyx-tube. Calyx-tube slightly wider than operculum; fruit  $\pm$  urn-shaped.

Habit: Mallee or small tree.

Distribn: Av, Co, Ey, St.

Flg: Mar-Sept



104 ***E. gracilis***  
var. ***gracilis***  
Snap-and-rattle  
or Yorrell  
(see p. 203)

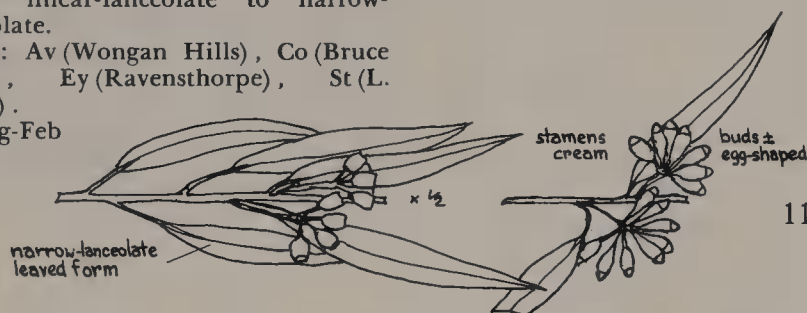
H. Operculum hemispherical-conical, much shorter than the calyx-tube.

I. Fruit ovoid to barrel-shaped, 4-6 mm long x 3-4 mm wide.

Habit: Mallee (1-3 m), or small tree up to 10 m high; bark above  $\pm$  1.5 m on trunk smooth and grey to red-brown; leaves linear-lanceolate to narrow-lanceolate.

Distribn: Av (Wongan Hills), Co (Bruce Rock), Ey (Ravensthorpe), St (L. Grace).

Flg: Aug-Feb



116 ***E. ovularis***  
Small-fruited  
Mallee

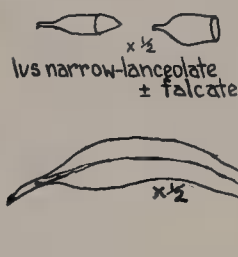
I. Fruit cylindrical or cup-shaped, 6-8 mm long x 5 mm wide.

Habit: Usually ■ mallee ( $\pm$  2.5 m high), sometimes a small tree (up to 5 m high), mainly with smooth, reddish-brown bark, although there may be some fibrous bark for up to 1.5 m on the trunk.

Distribn: Co (Coolgardie-Norseman).

Flg: Dec-Mar

Note. Pryor & Johnson (1971) consider this to be conspecific with the preceding species *E. ovularis*. Following Chippendale (1976) however, the species is kept separate.



116a ***E. cylindrocarpa***  
Woodline Mallee

G. Base of trunk covered with rough, brownish, close-textured or fibrous bark; upper part smooth, brownish-grey to grey. Present in Ir- Ir(C) area.

Distribn: No 117 Ir (Perenjori), Ir (C) (Shark Bay - Geraldton); no 118 Ir (C) (Shark Bay - Dongara, Abrolhos).

Note. The two sibling species illustrated may be distinguished by leaf venation, size of oil glands and size and shape of fruit.



117 ***E. baudiniana***

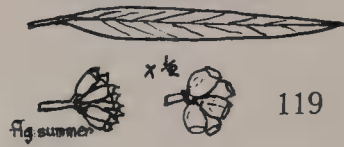
118 ***E. tamala***

## F. Bark on trunk and branches smooth.

Habit: Mallee up to 2.7 m high with smooth grey-brown bark. Leaves narrow to linear-lanceolate, shining; operculum hemispherical; calyx-tube  $\pm$  cylindrical; fruits cylindrical to pear-shaped, 4-5 mm wide.

Distribn: Ir (C) (Dongara - Murchison R. area).

Note. For further detail see Johnson (1962), Chippendale (1973, 1976), Carr and Carr (1976).



119

**E. oraria**  
Ooragmandee

## B. Flowers mostly in cymes, corymbs or panicles.

## C. Fruit 2 cm or more in diameter.

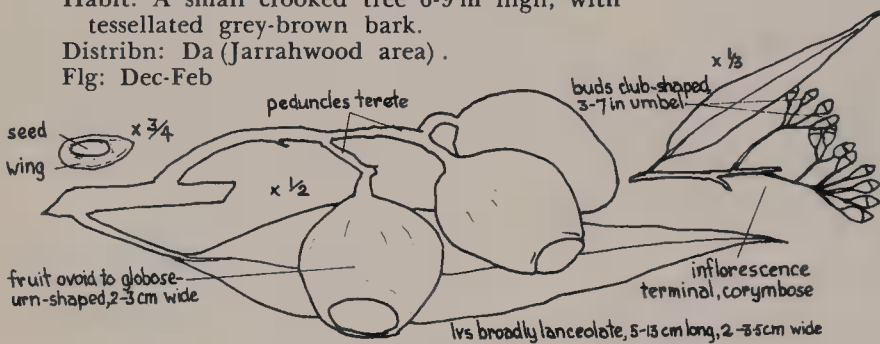
## D. Flowers white (sometimes pale pink).

## E. Seeds reddish-brown with a large wing.

Habit: A small crooked tree 6-9 m high, with tessellated grey-brown bark.

Distribn: Da (Jarrahwood area).

Flg: Dec-Feb



120

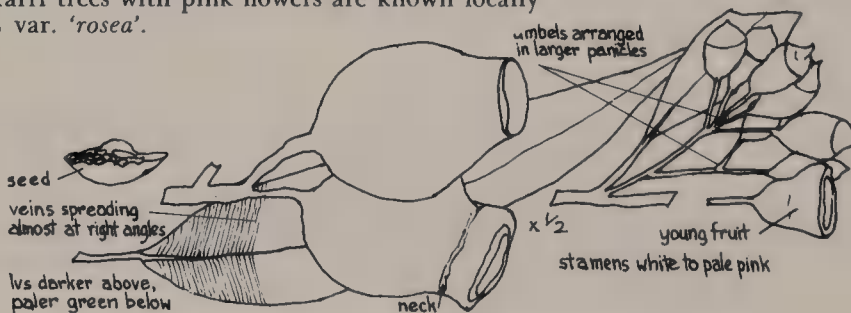
**E. haematoxylon**  
Mountain Marri

E. Seeds black with only a minute wing;  
fruit with a distinct 'neck'.

Habit: In forest areas it is a large tree up to 33 m high, with large, spreading branches, but in the northern and southeastern limits of its distribution it may be reduced to a small tree or even a shrub. Bark rough, flaky and friable, grey-brown.

Distribn: All districts of southwest province.  
Flg: Feb-Mar (Nov)

Note. Carr & Carr (1972) reported that what had been recorded as *E. calophylla* var. *maideniana* was in fact a male tree of *E. calophylla*. Marri trees with pink flowers are known locally as var. *'rosea'*.



121

**E. calophylla**  
Marri



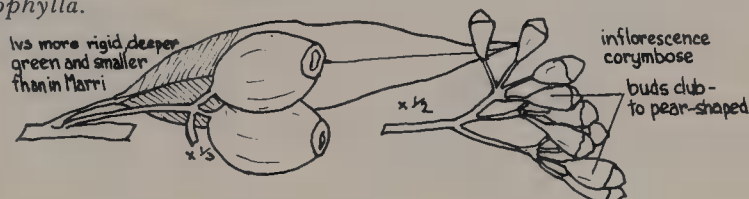
- D. Flowers bright red to crimson; fruit usually without any 'neck'.

Habit: Small tree up to 9 m high, with rough persistent bark.

Distribn: Wa (s c) (Brookes Inlet - Nornalup-Wilson Inlet).

Flg: Dec-Feb

Note. This species was earlier widely grown in the Perth area for its vivid flowers, but it became subject to a severe canker disease which was endemic on, but tolerated by, the related *E. calophylla*.



122 ***E. ficifolia***  
Red-flowering  
Gum

- C. Fruit 0.5-1.3 cm in diameter.

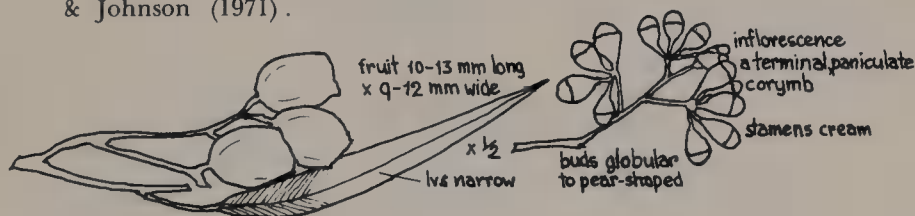
- D. Fruit globular to urn-shaped on long terete peduncles and slender pedicels.

Habit: Tree. The form which comes into the area of the key is smooth-barked.

Distribn: An-Ir (C) (Shark Bay, Murchison R., Mt Narryer).

Flg: Apr-May

Note. A status change is foreshadowed by Pryor & Johnson (1971).



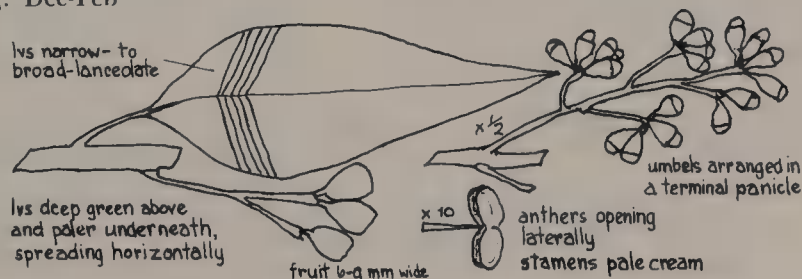
123 ***E. dichromophloia***  
Variable-barked  
Bloodwood

- D. Fruit obovoid-truncate or pear-shaped; peduncles slightly flattened, widening at top; pedicels short.

Habit: Large forest tree 40-46 m high, with rough, dark-grey bark.

Distribn: Wa (s c) (Deep R. to Denmark R.).

Flg: Dec-Feb



124 ***E. guilfoylei***  
Yellow Tingle

## Subsection 6

- A. Operculum hemispherical (obtuse or sometimes umbonate), oblong-cylindrical or cylindrical.

(alternate A p. 216)

- B. Operculum obtuse or with only a small point, not beaked.

(alternate B p. 216)



- C. Peduncles flat or  $\pm$  flat, widening at the top, strap-shaped, sometimes twisted.



- D. Fruit obovoid, hemispherical or urn-shaped.



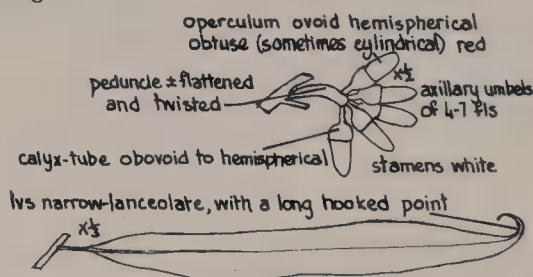
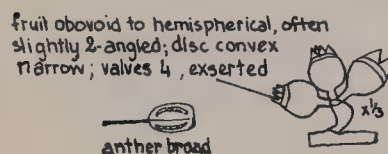
- E. Trees often with a spirally-fluted, twisted or ridged trunk; bark red-brown, smooth.

- F. Leaves lustrous, green; branchlets reddish and shining; anthers broad.

Habit: Tree usually 15-20 m high, with erect slender branches.

Distribn: An, Av (Cunderdin), Co (Ninghan-Kalgoorlie), Ey (Ravensthorpe), Ey (C), Ir (Mullewa), St (L. Grace). Widespread in the wheatbelt and eastern goldfields.

Flg: Nov-Mar



82a ***E. salubris***  
var. ***salubris***  
Gimlet  
(see also p. 192)

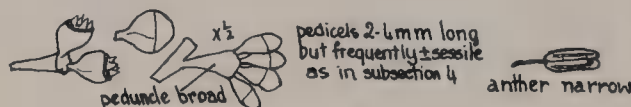
- F. Leaves pale bluish-green; branchlets covered with a silvery-white powder; anthers long and narrow.

Habit: Tree 8-12 m high.

Distribn: Confined to the eastern goldfields.

Co (Bullabulling, Coolgardie to Higginsville).

Flg: Oct-Jan



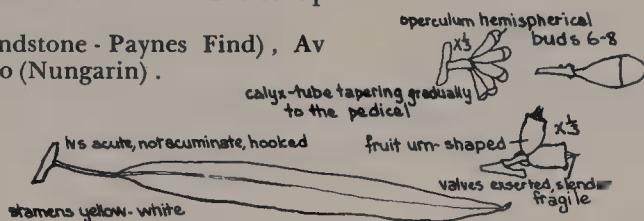
72 ***E. campaspe***  
Silver-topped  
Gimlet  
(see also p. 188)

E. Mallee (usually), with dark-grey rough bark on the lower trunk.

Habit: Bushy mallee, 3-6 m high, with densely-foliaged branches. Sometimes a tree up to 12 m high.

Distribn: Av (Sandstone - Paynes Find), Av (Dowerin), Co (Nungarin).

Flg: Dec-Jan



125 ***E. plenissima***  
Oil Mallee

D. Fruit cup- or pear-shaped.

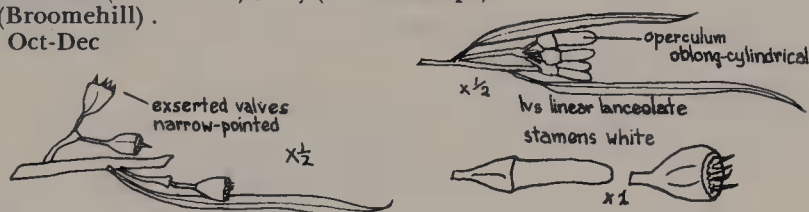


E. Fruit small, cup-shaped, 4-6 mm wide; operculum considerably longer than calyx-tube.

Habit: Mallee or small tree up to 10 m high; bark smooth, red-brown to grey.

Distribn: Av (Cunderdin), Ey (Ravensthorpe), St (Broomehill).

Flg: Oct-Dec



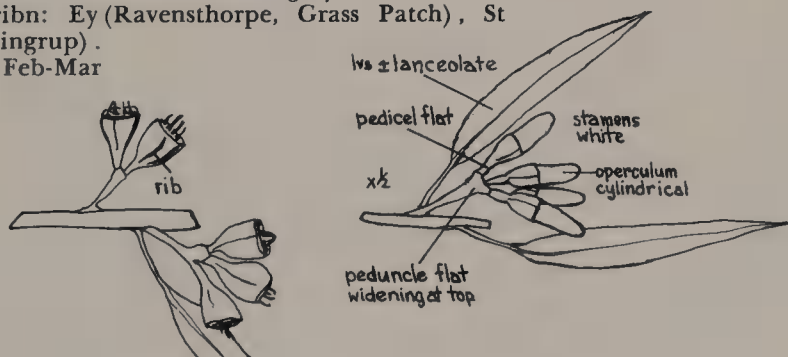
9 ***E. spathulata***  
subsp. ***spathulata***  
Swamp Mallet  
(see p. 159)

E. Fruit pear-shaped,  $\pm$  8 mm wide, with 1 or 2 ribs; operculum only slightly longer than calyx-tube.

Habit: Mallee or small tree 2-4.5 m high; bark smooth, reddish-brown to grey.

Distribn: Ey (Ravensthorpe, Grass Patch), St (Pingrup).

Flg: Feb-Mar



9a ***E. spathulata***  
subsp. ***grandiflora***

C. Peduncles  $\pm$  terete, but sometimes slightly wider at the top.

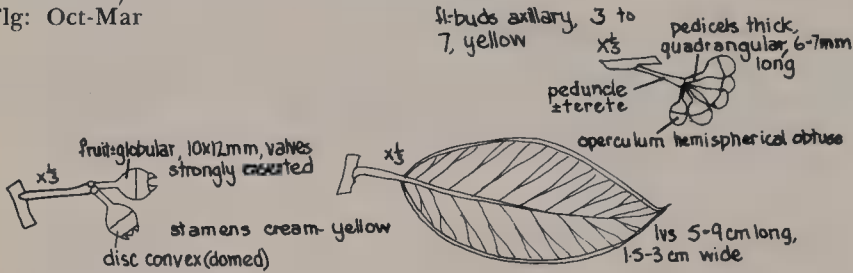
D. Fruit domed.

E. Adult leaves broad-lanceolate, thick, yellow-green; fruit  $\pm$  globular.

Habit: Mallee 3-6 m high, with smooth, reddish-brown bark. Rough bark is present at the base of older stems.

Distribn: An (Pindar), Co (Kununoppin, Westonia).

Flg: Oct-Mar



126 ***E. ewartiana***  
Ewart's Mallee

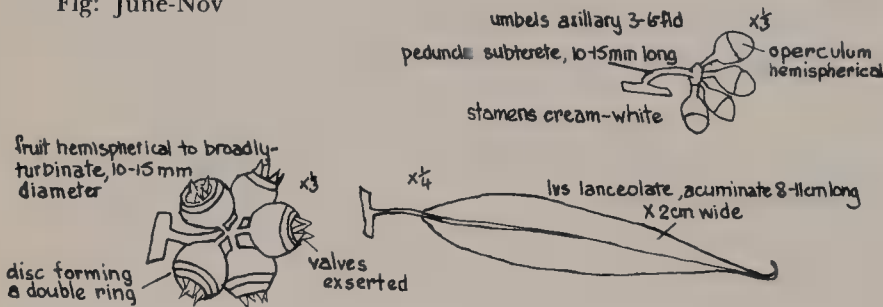
E. Adult leaves narrow-lanceolate to lanceolate, acuminate; fruit hemispherical to top- or cup-shaped.

F. Tree. Flower-buds 3-6 in umbel.

Habit: A white gum 12-15 m high, with smooth, white to pale-pink bark.

Distribn: Da (Kelmescott-Dandalup).

Flg: June-Nov



127 ***E. lanepoolei***  
Salmon-bark Wandoo

F. Mallee. Flower-buds in 3s; stamens in 4 bundles.

108 ***E. ebbanoensis***  
Sandplain Mallee  
(see p. 205)

D. Fruit truncate, not domed.

E. Operculum the same width as the calyx-tube, smooth.

(alternate E p. 216)

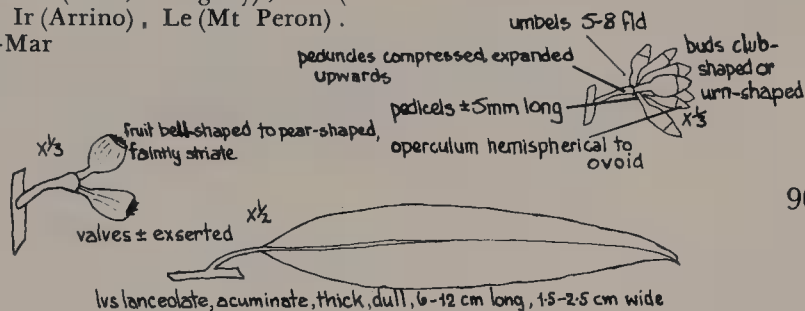
F. Valves triangular,  $\pm$  shortly-exserted.

G. Valves 4; fruits 7-10 mm wide.

- H. Tree 9-20 m high, with smooth white or greyish-white bark. A talc-like creamy to pinkish powder covers the trunk.

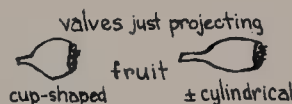
Distribn: Av (York, Pingelly), Da (Bindoon), Ir (Arrino), Le (Mt Peron).

Flg: Dec-Mar



90 ***E. accedens***  
Powderbark  
Wandoo  
(see p. 196)

- H. Mallee or slender tree 3-8 m high, with yellowish-brown, smooth-appearing bark (which is however rough and prickly to the touch), shedding in long ribbon-like flakes.



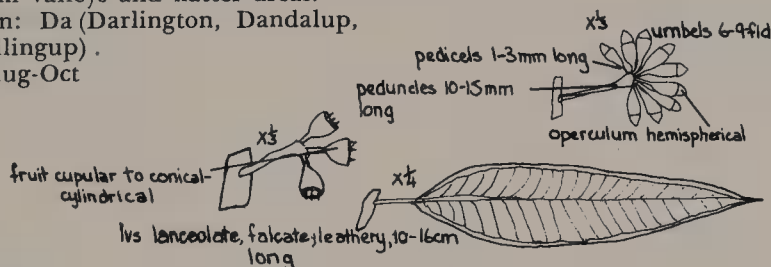
98 ***E. sheathiana***  
Ribbon-barked  
Gum  
(see pp. 200, 202)

- G. Valves 3; fruit small, 4-6 mm wide.

Habit and habitat: Tree with white smooth powdery bark, up to 20 m high. Grows in stream valleys and flatter areas.

Distribn: Da (Darlington, Dandalup, Dwellingup).

Flg: Aug-Oct



128 ***E. laeliae***  
Darling Range  
Ghost Gum  
or Butter Gum

- F. Valves subulate, long-exserted; operculum and fruit hemispherical.

Habit: Tree 20-25 (30 m) high, with spreading or erect branches giving an umbrella-shaped appearance; bark thick, smooth and friable, salmon-pink.

Distribn: Av (Cunderdin, Moora), Co, Ey, Ir, Le, St; widespread in wheatbelt and gold-fields area.

Flg: Sept-Mar

lvs lanceolate to oblong-lanceolate, 7-12cm long, 0.5-1.5cm wide, highly shining



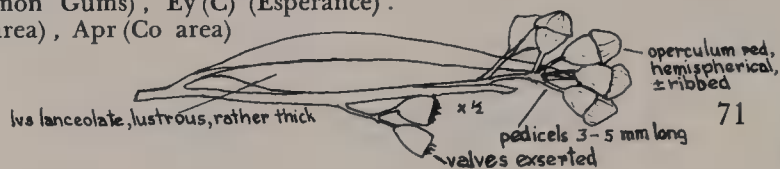
129 ***E. salmonophloia***  
Salmon Gum

- E. Operculum wider than the calyx-tube, striate or ribbed.

Habit: Mallee with smooth silver-grey bark, 3-6 m high.

Distribn: Co (Boorabbin, Karalee), Ey (Ravens-thorpe, Salmon Gums), Ey (C) (Esperance).

Flg: Dec (Ey area), Apr (Co area)



71

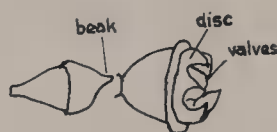
***E. pileata***

Capped Mallee

(see p. 188)

- B. Operculum beaked, rostrate.

- C. Valves much incurved; disc erect, extending over exserted valves; buds shortly-pedicellate; fruits ± sessile, 2-3 cm wide.



74

***E. megacarpa***

Bullich

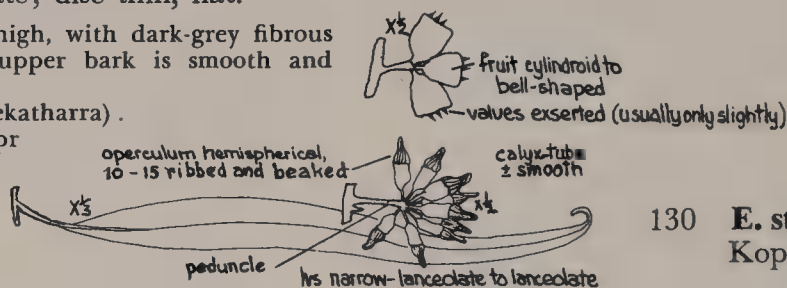
(see p. 189)

- C. Valves erect, subulate; disc thin, flat.

Habit: Mallee 3-9 m high, with dark-grey fibrous bark at the base; upper bark is smooth and whitish-yellow.

Distribn: An (Cue-Meekatharra).

Flg: Aug-Nov, Mar-Apr



130

***E. striatocalyx***

Kopi Gum

- A. Operculum conical, conical-cylindrical or conical-hemispherical, sometimes beaked.



- B. Fruits medium sized to large, 1.7-5.5 cm wide.

(alternate B p. 218)

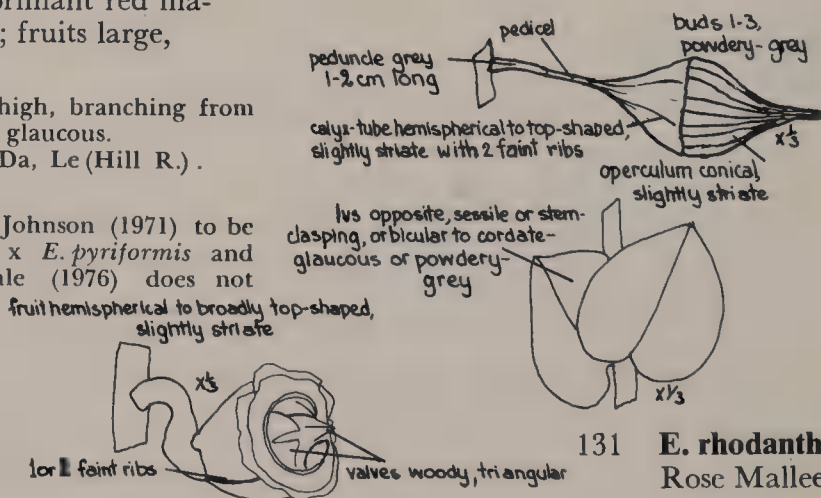
- C. Flowers (stamens) with brilliant red filaments and yellow anthers; fruits large, 3.5-5.5 cm wide.

Habit: Mallee shrub 2-3 m high, branching from the ground; bark smooth, glaucous.

Distribn: Av (New Norcia), Da, Le (Hill R.).

Flg: Throughout the year.

Note. Considered by Pryor & Johnson (1971) to be a hybrid of *E. macrocarpa* x *E. pyriformis* and partly stabilized. Chippendale (1976) does not accept it as a hybrid.



131

***E. rhodantha***

Rose Mallee



Leaves stalked; calyx-tube longer and more attenuated; operculum rounder and not beaked.

Note. Chippendale (1976) considers var. *petiolaris* to be a form variant only of *E. rhodantha*.

131a ***E. rhodantha***  
var. ***petiolaris***

C. Flowers (stamens) creamy-white; fruits medium size,  $\pm$  1.7-2.5 cm in diameter.

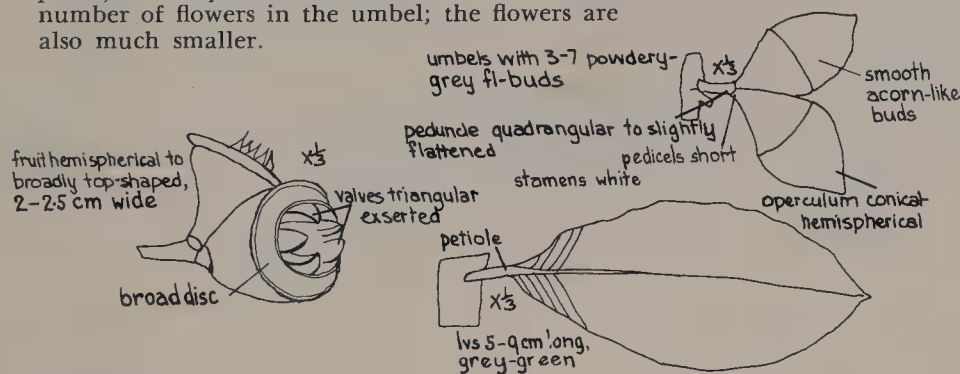
D. Mature leaves oblong, ovate-elliptical to broad-lanceolate.

Habit: Mallee forming clumps up to 4 m in diameter and 3 m high. Bark brownish-grey at base of stems, then becoming smooth above. Branchlets glaucous.

Distribn: Av (Piawaning, Moora).

Flg: June-July

Note. Considered by Pryor & Johnson (1971) to be a hybrid between *E. drummondii* and *E. macrocarpa*. It differs from *E. macrocarpa* (no 73, p. 189) in its pointed, stalked leaves and in the number of flowers in the umbel; the flowers are also much smaller.



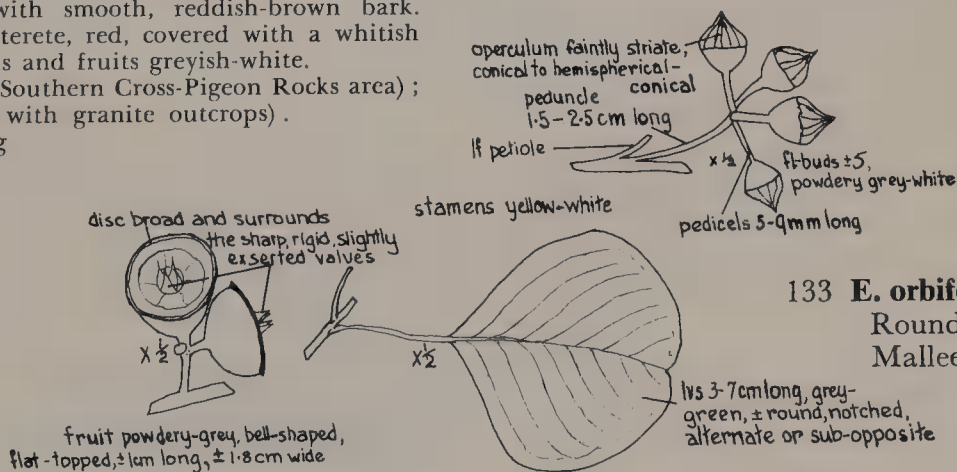
132 ***E. carnabyi***

D. Mature leaves broadly ovate to orbicular, notched.

Habit: Mallee to 3 m high (occasionally a tree to 6 m), with smooth, reddish-brown bark. Branchlets terete, red, covered with a whitish bloom. Buds and fruits greyish-white.

Distribn: Co (Southern Cross-Pigeon Rocks area); (associated with granite outcrops).

Flg: May-Aug



133 ***E. orbifolia***  
Round-leaved  
Mallee

B. Fruits up to 1.5 cm wide.

C. Fruit domed (at least in the young state), or with rim erect.

(alternate C p. 220)

D. Disc sloping upwards, much incurved, surrounding the triangular projecting valves.

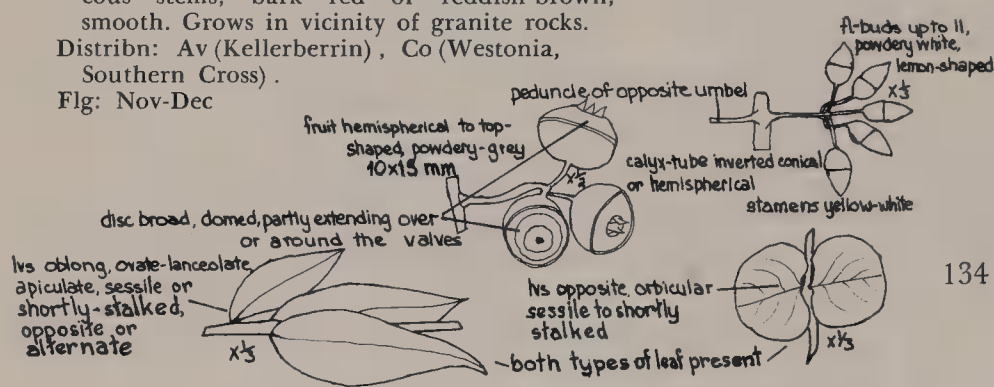
(alternate D p. 220)

E. Leaves mostly opposite,  $\pm$  sessile. All parts of tree powdery silvery-grey.

Habit: Mallee 3-6 m high, with slender glaucous stems; bark red or reddish-brown, smooth. Grows in vicinity of granite rocks.

Distribn: Av (Kellerberrin), Co (Westonia, Southern Cross).

Flg: Nov-Dec



134

**E. crucis**  
Southern Cross  
Silver Mallee

E. Leaves alternate, stalked.

F. Trees 6-30 m high.

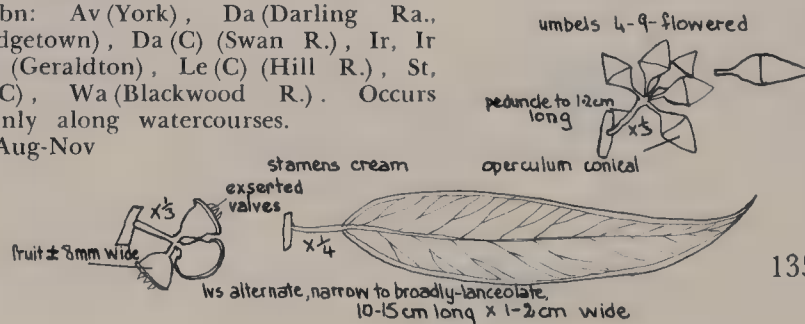
G. Leaves narrow- to broadly-lanceolate 10-22 cm long.

H. Tree with rough black bark on the trunk and lower parts of the branches.

Habit: A tree 9-15 m high with a short stout trunk; bark smooth and grey on upper branches.

Distribn: Av (York), Da (Darling Ra., Bridgetown), Da (C) (Swan R.), Ir, Ir (C) (Geraldton), Le (C) (Hill R.), St, St (C), Wa (Blackwood R.). Occurs mainly along watercourses.

Flg: Aug-Nov



135

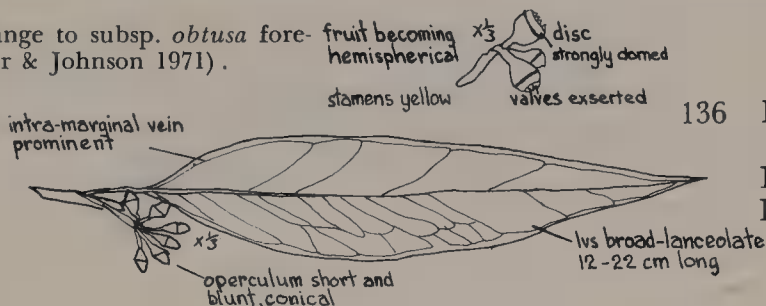
**E. rudis**  
Flooded Gum

H. Tall tree (24-30 m high), with smooth white bark.

Distribn: Ir (Bowes R.). (Confined to watercourses in the drier parts of W. Aust.)

Flg: Jan-Mar

Note. Status change to subsp. *obtusa* fore-shadowed (Pryor & Johnson 1971).



136

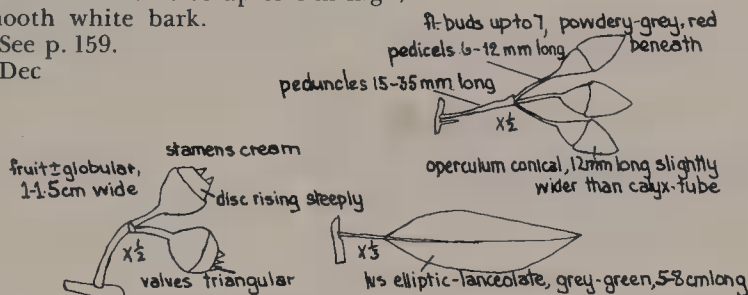
***E. camaldulensis***  
var. ***obtusa***  
Blunt-budded  
River Red Gum

G. Leaves elliptic-lanceolate, grey-green, 5-8 cm long.

Habit: A small crooked tree up to 8 m high, with smooth white bark.

Distribn: See p. 159.

Flg: Sept-Dec



10

***E. drummondii***  
Drummond's  
Gum

(see also p. 159)

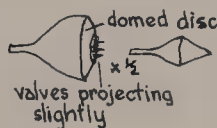
F. Mallees 3-6 m high.

G. Fruit 1-1.5 cm wide.

Habit: Mallee up to 3 m high, with smooth grey bark shedding in ribbons.

Distribn: Co (Norseman area).

Flg: Nov-Jan



93

***E. diversifolia***  
Soap Mallee

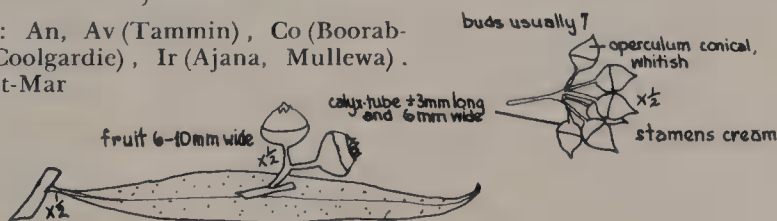
(see p. 197)

G. Fruit 6-12 mm wide.

H. Bark smooth, whitish-grey; leaves narrow-lanceolate, hooked.

Distribn: An, Av (Tammin), Co (Boorabbin, Coolgardie), Ir (Ajana, Mullewa).

Flg: Sept-Mar



11

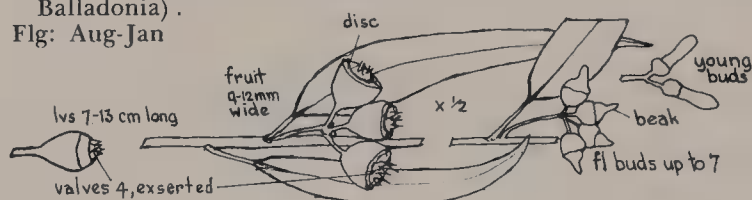
***E. leptopoda***  
Tammin Mallee  
(see also p. 160)

H. Bark rough and fibrous, grey to dark grey; leaves lanceolate.

Habit: Mallee up to 4 m high.

Distribn: Co (between Fraser Ra. and Balladonia).

Flg: Aug-Jan



137 ***E. balladoniensis***  
Balladonia Mallee

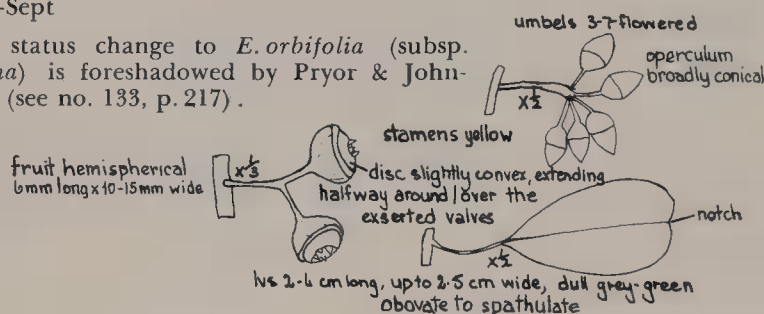
D. Disc flat or slightly convex, not incurved.

Habit: Mallee shrub 2-6 m high, with slender stems and reddish-brown smooth bark.

Distribn: Co (Pigeon Rock, Coolgardie, Norseman); growing on granite soils.

Flg: July-Sept

Note. A status change to *E. orbifolia* (subsp. *websterana*) is foreshadowed by Pryor & Johnson 1971 (see no. 133, p. 217).



138 ***E. websterana***  
Webster's Mallee

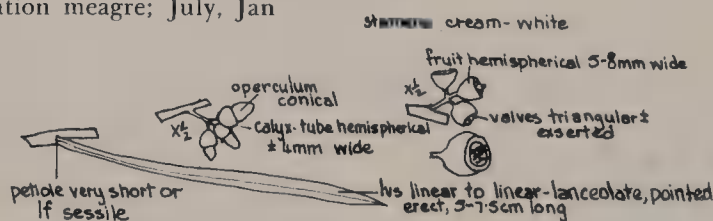
C. Fruit truncate, not domed.

D. Operculum narrower than top of calyx-tube; leaves linear.

Habit: Mallee 1.5-3 m high; bark smooth, greyish-brown.

Distribn: Ey (C) (Israelite Bay area).

Flg: Information meagre; July, Jan



139 ***E. angustissima***  
Narrow-leaved Mallee

D. Operculum the same width as the calyx-tube.

E. Leaves linear, with fine hooked points.

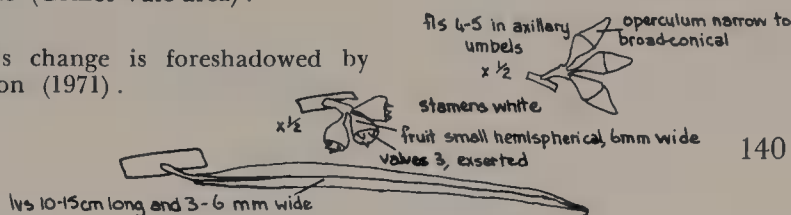
F. Peduncle short, flattened; leaves bright green.

Habit: Mallee or small tree 4.5-8 m high, with fibrous, rough, dark-grey bark.

Distribn: An, Co (Comet Vale area).

Flg: Dec-Feb

Note. A status change is foreshadowed by Pryor & Johnson (1971).



140 ***E. jutsonii***  
Jutson's Mallee

F. Peduncle 5-8 mm long,  $\pm$  terete; leaves very narrow, pale green, prominently glandular.

Habit: Tree or tall mallee 4.5-11 m high, with lower trunk covered with rough, grey bark; bark on upper branches smooth grey.

Distribn: Co (Pigeon Rock area).

Flg: Aug-Feb



141 ***E. formanii***

E. Leaves linear-lanceolate to broad-lanceolate or narrow-oblong.

F. Fruit hemispherical, cup- or bell-shaped.

G. Operculum conical or bluntly conical.

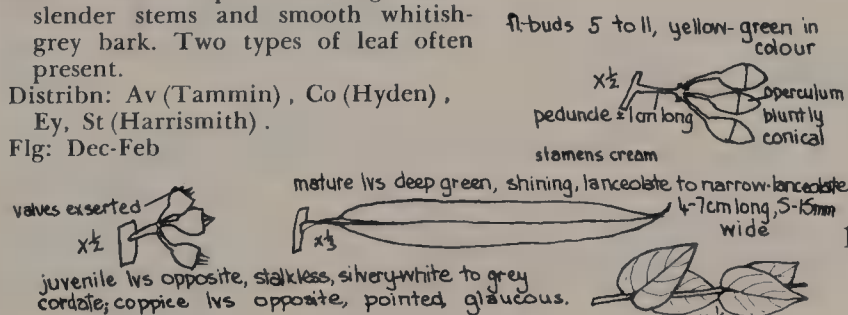
H. Valves strongly exerted.

J. Valves long, slender, pointed; flower-buds in simple umbels.

Habit: Mallee up to 3 m high, with slender stems and smooth whitish-grey bark. Two types of leaf often present.

Distribn: Av (Tammin), Co (Hyden), Ey, St (Harrismith).

Flg: Dec-Feb



142 ***E. albida***  
White-leaved  
Mallee

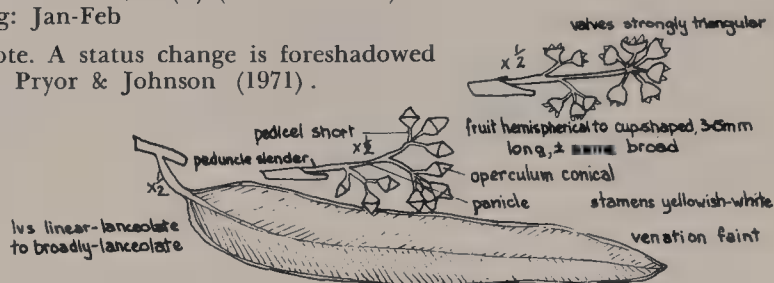
- J. Valves sturdy, broadly-triangular;  
flower-buds in terminal panicles.

Habit: Tree 12-20 m high, with smooth  
matt-white powdery bark. Southern  
form.

Distribn: An, Ir (C) (Murchison R.).

Flg: Jan-Feb

Note. A status change is foreshadowed  
by Pryor & Johnson (1971).



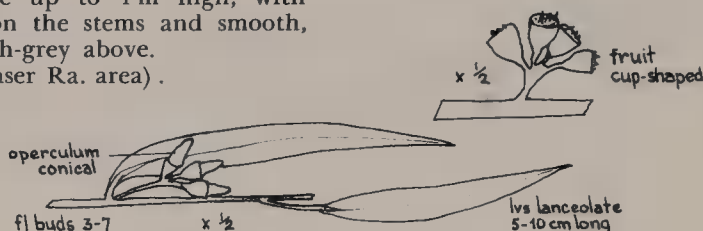
143 ***E. microtheca***  
Flooded Box

- H. Valves slightly exerted (or at rim  
level).

Habit: A mallee up to 4 m high, with  
flaking bark on the stems and smooth,  
grey or pinkish-grey above.

Distribn: Co (Fraser Ra. area).

Flg: Oct-Apr



144 ***E. effusa***  
Rough-barked  
Gimlet

- G. Operculum shortly conical, beaked or  
with a small point.

- H. Peduncle flattened; pedicels thick,  
2-4 mm long.



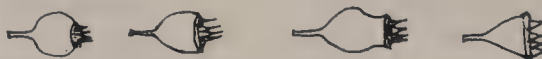
72 ***E. campaspe***  
Silver-topped  
Gimlet  
(see pp. 188, 212)

- H. Peduncle slightly compressed; pedi-  
cels  $\pm$  8 mm long (conical-budded  
form).



98 ***E. sheathiana***  
Ribbon-barked  
Gum  
(see pp. 200, 202)

- F. Fruit globular, sub-globular, urn-shaped  
or top-shaped.



- G. Operculum as long as or longer than  
the calyx-tube.

(alternate G p. 225)

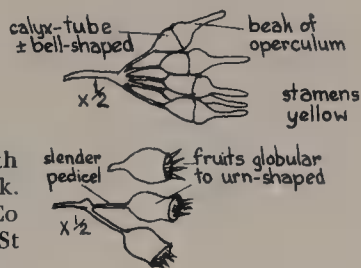


- H. Leaves blue-green not shining; branchlets, flower-buds and fruits more or less powdery-white; operculum conical, beaked.

Habit: Tree 15-21 m high, with a smooth slender trunk and a white or grey bark.

Distribn: Av (Tammin, Wongan Hills), Co (Coolgardie, Norseman), Ey, Ey (C), St (Mt Barker).

Flg: Aug-Nov



- 13 **E. transcontinentalis**  
Redwood  
or Boongul  
(see pp. 161, 165)

- H. Leaves deep green, slightly glossy or lustrous (shining); branchlets not powdery-white; operculum conical (short or long) but not beaked.

- I. Leaves spreading.

(alternate I p. 224)

- J. Leaves deep green, shining.

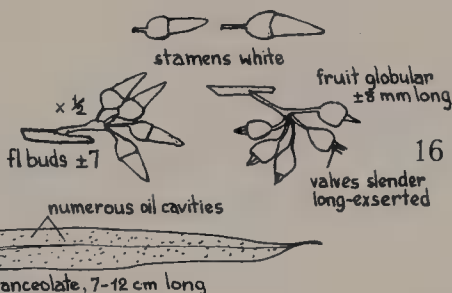
- K. Operculum conical, acute, 1.3-1.8 times as long as calyx-tube.

- L. Tree.

Habit: Spreading tree up to 30 m high, with rough, grey bark on the trunk and reddish-grey, smooth branches.

Distribn: Av (Wongan Hills, Cow-cowing), Co (Coolgardie, Salmon Gums), Ey (Grass Patch), St (Wagin).

Flg: Mainly Nov-Feb, Apr-Sept



- 16 **E. longicornis**  
Red Morrel  
(see p. 162)

- L. Mallee-marlock.

A small sandplain mallee or marlock 1-3 m high, with smooth light- to grey-brown bark.



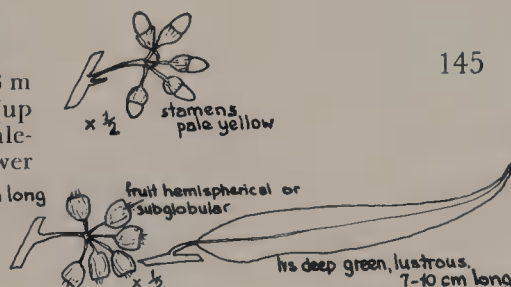
- 20 **E. redunca**  
Black Marlock  
(see pp. 164, 198)

- K. Operculum conical-cylindrical, obtuse,  $\pm$  same length as the calyx-tube.

Habit: Commonly a mallee ( $\pm$  3 m high); sometimes an erect tree (up to 13 m high) with persistent pale-grey fibrous bark on the lower parts of the stems.

Distribn: Co (Coolgardie, Salmon Gums).

Flg: Mainly Aug-Feb



- 145 **E. oleosa**  
var. **oleosa**  
Giant Mallee

- J. Leaves only slightly glossy, not shining, green or yellow-green; operculum  $\pm$  the same length as the calyx-tube.

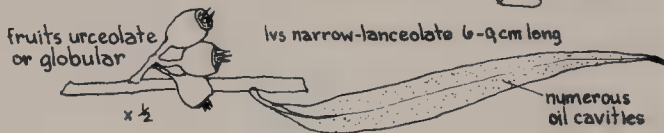
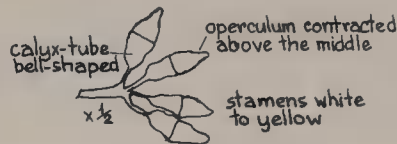
- K. Operculum conical, often contracted above the middle.

Habit: Mallee ( $\pm$  2.5 m high), or tree (up to 12 m high), with dark-grey fibrous persistent fissured bark on the lower trunk.

Distribn: An (Ninghan, Pindar), Av, Co (Coolgardie), Ir-Ir (C) (Mullewa-Murchison R.), St (Broomehill).

Flg: Nov-Feb

Note. A status change to *E. borealis* is foreshadowed by Pryor & Johnson 1971.



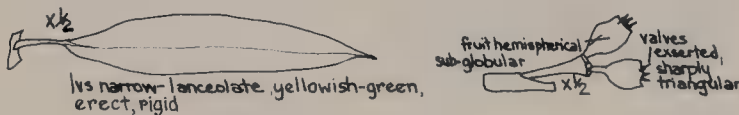
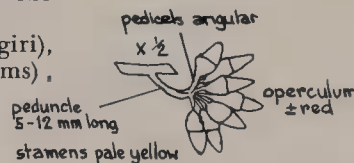
145a ***E. oleosa***  
var. ***borealis***  
Ninghan Mallee

- K. Operculum conical but not narrowed towards the top.

Habit: Mallee 2-6 m high; ribbons of older bark accumulate towards the lower portion of the trunk.

Distribn: An (Menzies), Av (Calingiri), Co (Southern Cross, Salmon Gums), Ir (Yuna area).

Flg: Feb-Mar



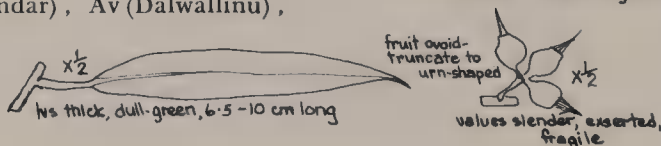
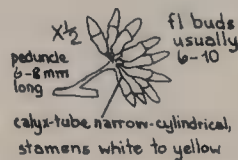
146 ***E. rigidula***  
Stiff-leaved  
Mallee

- I. Leaves erect, somewhat rigid, dull-surfaced.

Habit: Mallee (2-5 m high), or small tree (up to 12 m high), with a rough, grey, spirally-twisted persistent bark on the trunk and lower parts of the branches.

Distribn: An (Pindar), Av (Dalwallinu), Co (Kulja).

Flg: Sept-Jan



147 ***E. kochii***

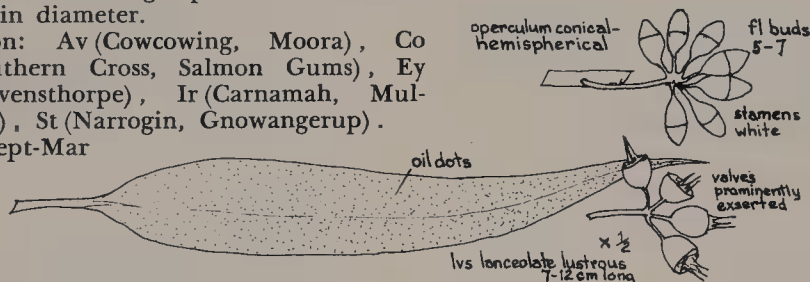
G. Operculum usually shorter than the calyx-tube.

H. Fruit not above 5 mm wide; valves slender, strongly projecting.

Habit: Large, usually umbrella-shaped tree with smooth, salmon-pink bark and highly-shining leaves, 15-25 m high. Trunk extending up to 13 m and  $\pm$  1 m in diameter.

Distribn: Av (Cowcowing, Moora), Co (Southern Cross, Salmon Gums), Ey (Ravensthorpe), Ir (Carnamah, Mullewa), St (Narrogin, Gnowangerup).

Flg: Sept-Mar



129

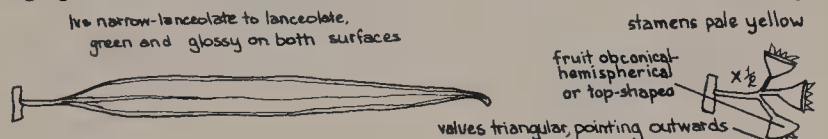
***E. salmonophloia***  
Salmon Gum  
(see p. 215)

H. Fruit 5-6 mm wide; valves triangular, pointing outwards.

Habit: Tree 12-24 m high, with rough, persistent grey fibrous bark up to  $\pm$  6 m on trunk, then becoming smooth and yellowish-white.

Distribn: Co (Westonia, Bullabulling, Norseman).

Flg: Jan-Feb



148

***E. melanoxylen***  
Black Morrel

**FIELD KEY TO SELECTED EUCALYPTUS SPECIES**  
**TREES AND MALLEES**

**Trees**

(for Mallees see p. 234)

PageA. Bark smooth on trunk and branches.

Section 1

A. Bark rough over basal part of trunk only (giving a stocking effect) or rough up to the lower parts of the branches, while the rest is covered with smooth bark, or rough over the whole trunk and the branches.

Section 2 230

For illustration of species see main key.  
For note re buds and fruits see p. 155

**Section 1***Species no.*Page

A. Bark yellow to white, pale greyish-white, mottled white and grey or pinkish-yellow.

(alternate A p. 228)

B. Bark white to pinkish-yellow and powdery to the touch.

C. Upright trees 10-20 m high.

D. Fruit truncate.



E. Fruit bell- to pear-shaped,  $\pm$  1 cm long and 7-10 mm wide, with 4  $\pm$  exerted valves.



Powder on bark creamy with a pale-orange tint.

Bindoon, York, Arrino areas. Lateritic soils.

90 **E. accedens** 196  
Powderbark 215  
Wandoo

E. Fruit  $\pm$  cup-shaped, 4-6 mm long and wide, with 3 exerted valves.

Powder on bark white. Grows more in stream valleys and flatter areas.

Darling Ra. area.

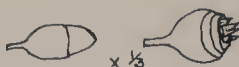


128 **E. laeliae** 215  
Darling Range  
Ghost Gum or  
Butter Gum

D. Fruit dome-shaped.

A white gum 12-15 m high. Buds egg-shaped.

Armada-Warooka area; Dryandra.

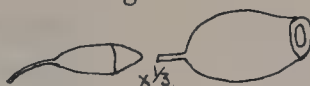


127 **E. lanepoolei** 214  
Salmon-bark  
Wandoo

## C. Slender tree of weeping habit, 6-8 m high.

Fruit large and urn-shaped; bark powdery-white.

Hopetoun, Esperance areas.

86 ***E. sepulcralis***  
Weeping Gum

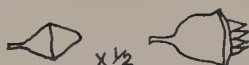
194

## B. Bark white (yellowish- or greyish-white or mottled white and grey) or salmon-coloured, not powdery to the touch.

## C. Fruit dome-shaped.

## D. Tall tree 20-30 m high; bark white.

Bowes R. area.

136 ***E. camaldulensis***  
var. **obtusa**  
Blunt-budded  
River Red Gum

219

## D. Small crooked tree up to 8 m high. Bark white, flowers creamy-white.

Wongan Hills, Pingelly, Collie and Ajana areas.

10 ***E. drummondii***  
Drummond's Gum

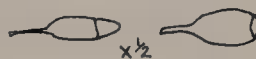
159

## C. Fruit truncate.

## D. Leaves darker green above, paler below.

Tall tree (up to 83 m), bark yellowish-white blotched bluish-grey.

Manjimup-Denmark, Karridale, Augusta, Porongurup Ra., Mt Manypeak (outlier).

87 ***E. diversicolor***  
Karri

194

## D. Leaves much the same in colour on both surfaces.

## E. Budcap (operculum) square with a raised cross, brilliant red.

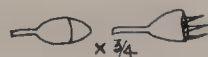
Stamens bright yellow; fruit large, 4-angled; tree up to 9 m high; bark white.  
Dongara-Jurien Bay area.25 ***E. erythrocorys***  
Illyarrie

167

## E. Budcap hemispherical, or conical with a long beak or horn.

## F. Leaves bright green, shining.

## G. Buds lemon-shaped, fruits hemispherical, small, on pedicels attached to a longer peduncle; valves exserted.

Tree 20-25 (-30) m high, with salmon-coloured bark.  
Wheatbelt-goldfields area.129 ***E. salmonophloia***  
Salmon Gum

215

- G. Buds hemispherical-conical, fruits globular to flask-shaped, lacking pedicels (i.e. sessile) on peduncles; valves enclosed.



Tree 12-15 m high, with white to greyish-white bark (paler than in *E. salmonophloia*).  
Norseman area.

89 ***E. brockwayi*** 195  
Dundas Mahogany

- F. Leaves dull, blue- or grey-green, not shining.

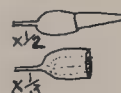
- G. Budcaps hemispherical at the base, becoming narrowly-conical upwards, forming a long beak; fruits  $\pm$  globular, valves exerted.



13 ***E. transcontinentalis*** 161  
Redwood or Boongul

Tree up to 21 m high, with white or grey-white bark.  
Wheatbelt and goldfields area.

- G. Budcaps horn-shaped, conical; fruits cylindrical to pear-shaped; valves  $\pm$  included.



92 ***E. wandoo*** 196  
Wandoo

Tree 20-25 m high, with mottled whitish-grey bark.

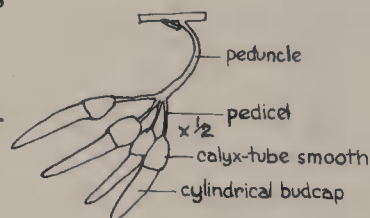
From Three Springs to Moora, Toodyay, Darling Ra., Boyup Brook to Kalgan R.; western edge of wheatbelt.

- A. Bark grey (sometimes dark greyish-white), brown, red-brown or greenish-red, with mottled patches of red and grey.

- B. Peduncles (main flower-stalks arising in axils of leaves) present.

(alternate B p. 230)

- C. Peduncles recurved (or becoming so at fruiting time), terete ( $\pm$  cylindrical) or flattened.



- D. Peduncles terete; pedicels (individual flower-stalks) present.

- E. Calyx-tube smooth; bark dark brown, red-brown or grey.

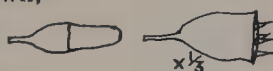
- F. Erect trees.



## G. Budcaps cylindrical; fruit bell-shaped.

Tree 9-16 m high; bark reddish-brown; flower-buds up to 7 in umbel.

Brookton-Peringillup, Gnowangerup-Ravensthorpe-Hopetoun; mainly on lateritic soils.



8 **E. astringens**  
Brown Mallet

159

## G. Budcaps horn-like or beaked, wider than the calyx-tube; fruit urn-shaped.

Tree 10-12 m high; bark light grey; flower-buds up to 11.

Wheatbelt and goldfields area and towards the south coast.



14 **E. flocktoniae**  
Merrit

161

## F. Slender tree with weeping branches.

Bark red-brown; branchlets, buds and fruits pale grey-powdery; flower-buds in 3s; leaves blue-green; fruits large.

Found in vicinity of granite outcrops.

Oberin Hill (Dowerin), Mt Caroline, Westonia, Fraser Ra.



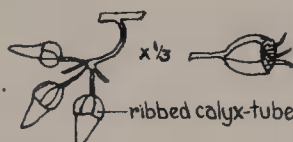
69 **E. caesia**  
Gungurru

187

## E. Calyx-tube (and usually the fruits), ribbed; bark grey or grey-brown.

## F. Flower-buds up to 13 in umbel.

Tree up to 9 m high; bark grey-brown. Narrogin and Wagin districts.



12 **E. falcata**  
Silver or White Mallet

160

## F. Flower-buds and fruits occurring singly, brilliant red, later brownish-red in colour.

Slender tree 4.5-6 m high; bark grey. Kundip area.



29 **E. stoatei**  
Scarlet Pear Gum

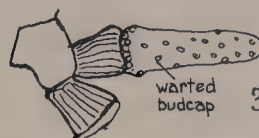
169

## D. Peduncles strap-shaped; pedicels lacking.

## E. Budcap long, cylindrical, obtuse, densely warted.

Tree to 12 m high, with greyish-red to greyish-brown bark; flower-buds 3-7 in umbel.

Ravensthorpe Ra., Fitzgerald R. Nat. Park.



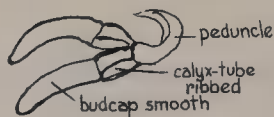
3 **E. megacornuta**  
Warted Yate

157

## E. Budcap smooth, horn-like.

Small tree 3-7 m high; bark greyish-yellow; fruit prominently ridged; leaves orbicular.

Pingrup to Gnowangerup, Ravensthorpe, Esperance. Grows on moist sandy loam flats.



6 **E. platypus**  
Moort

157

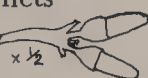
C. Peduncles  $\pm$  erect, sometimes twisted, flattened.

Trees with spirally-twisted, fluted and ridged trunks and red-brown shining bark; fruits dome-like, valves exserted.

## D. Leaves deep green, shining; branchlets reddish and shining; buds reddish.

Tree 15-20 (-25) m high.

Wheatbelt and goldfields area on heavy soils.



82 **E. salubris**  
Gimlet

212

## D. Leaves pale bluish-green; branchlets covered with a silvery-white powder.

Tree 8-12 m high.

Coolgardie and Higginsville areas.



buds shortly pedicellate or sessile  
on short broad peduncles, glaucous

72 **E. campaspe**  
Silver-topped  
Gimlet

188

212

## B. Peduncles (and pedicels) absent (buds occurring singly or in pairs or 3s on the branchlets).

Tree 6-7 m high, with red-brown, shiny, smooth, often fluted bark; calyx-tube and fruits 2-winged. Norseman-Salmon Gums-Circle Valley area.



60 **E. diptera**  
Two-winged  
Gimlet

183

## Section 2

## A. Bark rough and dark for 1-5 m from the base of trunk, then smooth for the rest of the trunk and branches.

When the rough black bark terminates abruptly on the trunk and is succeeded by a thin smooth bark, it gives a 'stocking' effect.

## B. Budcap striate to corrugated.

## C. Peduncle and pedicels present.

Tree 6-12 m high, with a short stout trunk and widely-spreading branches; bark  $\pm$  black over most of trunk and yellowish-brown and smooth on the branches; branchlets smooth, powdery white.

Goongarrie, Kalgoorlie, Coolgardie areas.



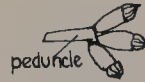
42 **E. clelandii**  
Cleland's  
Blackbutt

175

## C. Peduncles, but no pedicels present.

Tree up to 15 m high, with a 'stocking' of rough black bark on the lower trunk and smooth, grey bark above. Salt tolerant.

Quairading - Kondinin - L. Grace areas.



46

**E. kondininensis** 176  
Kondinin Blackbutt  
or Stocking Tree

## B. Budcap smooth.

## C. Peduncles, but no pedicels present.

Tree 9-20 m high, with rough, blackish, tessellated bark on trunk up to  $\pm$  3 m, then bark is smooth and reddish-brown.

Norseman area.



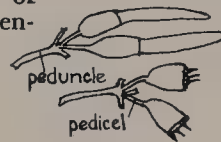
77

**E. dundasii** 191  
Dundas Blackbutt

## C. Slender peduncle and pedicels present.

Small tree averaging about 7 m in height, with a rough flaky dark-grey bark on the lower part of the trunk, succeeded upwards by a smooth greenish-brown bark. Salt tolerant.

L. Mears, Dangin, Mortlock R., Cunderdin.



17

**E. sargentii** 162  
Salt River  
Gum

**A.** Bark rough for the whole of the trunk; the branches may also be covered by the continuing rough bark, or they may be covered with smooth bark.

## B. Trunk and branches covered with rough bark.

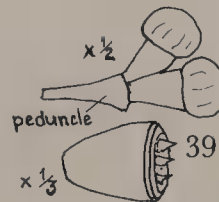
(alternate B p. 233)

## C. Fruit large, over 1 cm wide.

## D. Budcap shorter than calyx-tube.

E. Budcap  $\pm$  striate and broader than calyx-tube.

Spreading tree 7-40 m high, covered throughout with a rough, pale-grey persistent bark. Restricted to limestone areas on the Swan coastal plain. Yanchep-Ludlow-Busselton.



39

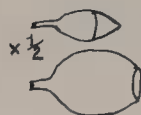
**E. gomphocephala** 174  
Tuart

E. Budcap smooth and  $\pm$  same width as calyx-tube.

## F. Fruit 1.2-1.5 cm wide.

A large tree up to 50 m high, with rough persistent greyish bark.

Darling Ra. and coastal plain. Stirling Ra. area, and south and west coast. Sandy moist soils.



101

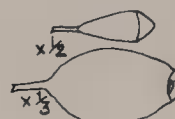
**E. patens** 201  
Western Australian  
Blackbutt

## F. Fruit 1.5-3 cm wide.

## G. Flowers (stamens) bright red to crimson; fruit without any neck.

Small tree up to 9 m high. Bark rough, persistent.

Nornalup-Walpole. Has been widely planted but is subject to a canker disease.



122

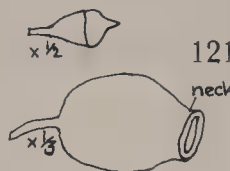
**E. ficifolia** 211  
Red-flowering  
Gum

## G. Flowers white or pale pink.

## H. Fruits with a distinct neck.

Ranges from a small tree to a large tree up to 33 m high; bark grey-brown, rough, flaky and friable.

Has a wide distribution in the south-west; common on Swan coastal plain and Darling Ra.



121

**E. calophylla** 210  
Marri

## H. Fruits ovoid to globose, without a distinct neck.

A small crooked tree 6-9 m high; bark rough, grey-brown, tessellated. Jarrahwood, Capel.



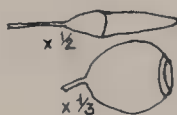
120

**E. haematoxylon** 210  
Mountain Marri

## D. Budcap longer than calyx-tube.

Tree ranging in height from 9-46 m. A 'stringy bark' tree with fibrous, persistent, reddish-grey or brown bark.

Darling Ra. to near south coast (Albany).



23

**E. marginata** 165  
Jarrah

## C. Fruit small, 4-7 mm wide.

## D. Buds and fruits sessile on peduncles (pedicels lacking).

Ranges from a small tree up to one  $\pm$  15 m high; bark rough, light grey. Could be confused in habit with tuart in its area of best growth, from Moore R.-Rockingham.



83

**E. decipiens** 193  
Redheart

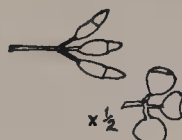
## D. Buds and fruits arranged on peduncles and pedicels.

## E. Trees 40-60 m high.

Walpole-Nornalup area along the coast.

## F. Leaves same colour above as below; bark fibrous reddish-brown.

Grows on deep-red loams in hilly country. Restricted to Walpole-Nornalup area.



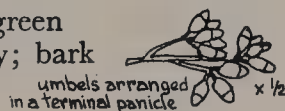
88

**E. jacksonii**  
Red Tingle

195

## F. Leaves deep green above, paler green below and spreading horizontally; bark dark grey.

Grows mostly in the hollows. Walpole-Denmark area.



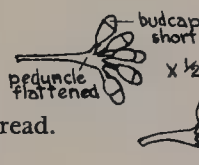
124

**E. guilfoylei**  
Yellow Tingle

211

## E. Trees 6-12 m high.

Bark grey-brown, rough and persistent. Wheatbelt and goldfields area. Widespread.



103

**E. loxophleba**  
York Gum

202

## B. Trunk rough-barked, branches smooth-barked.

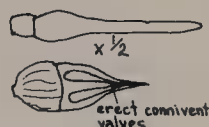
## C. Peduncles erect.

## D. Fruit not more than 1.2 cm in diameter.

E. Budcap very much longer than calyx-tube; buds sessile in umbels on  $\pm$  terete peduncles; fruit valves strongly exserted, connivent.

Tree 15-22 m high, bark dark grey, furrowed on trunk.

Coastal areas from Busselton - Cape Leeuwin, Albany, Mt Barker, Recherche Arch.



2

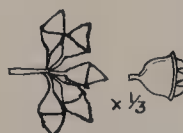
**E. cornuta**  
Yate

156

E. Budcap  $\pm$  the same length as the calyx-tube, markedly conical; buds on pedicels; fruit valves exserted, free.

Tree 9-15 m high; trunk bark black.

Occurs mainly along watercourses from Northampton through York, Darling Ra., Bridgetown, Blackwood R. areas.



135

**E. rudis**  
Flooded Gum

218

## D. Fruit 2-2.5 cm in diameter.

- E. Fruit globular,  $\pm$  sessile; budcap  $\pm$  as long as calyx-tube.

Tree 9-16 m high; bark ashy-grey to yellow, prickly.  
Greenough R. - Mogumber - Guildford areas.



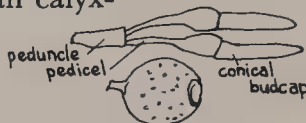
76

**E. todiana** 190  
Prickly Bark  
or Coastal Blackbutt



- E. Fruit globular, glandular-pitted, shortly stalked; budcap much longer than calyx-tube.

Tree 12-15 m high, with coarse bark on trunk.  
Denmark-Albany area.



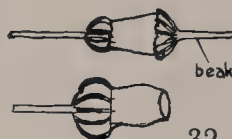
22

**E. staeri** 165  
Albany Blackbutt

### C. Peduncles recurved.

- D. Budcap beaked, coarsely ribbed; calyx-tube  $\pm$  smooth except for swollen base.

Grey-black fissured, rough bark on stems; buds yellow-red.  
Coolgardie-Norseman area.



32

**E. torquata** 170  
Coral Gum

- D. Budcap conical, smooth, very much longer than calyx-tube; fruits slightly wrinkled.

Tree up to 24 m high, with flaky, fibrous bark on trunk.  
Katanning-Albany-Ravensthorpe-Esperance areas.  
Grows on clay loam soils.



7

**E. occidentalis** 158  
Swamp or  
Flat-topped Yate

### Mallees and Marlocks

- A. Leaves linear or narrow- to broad-lanceolate.

(alternate A p. 237)



- B. Budcap at least twice as long as the calyx-tube.

- C. Budcap smooth.

- D. Calyx-tube and fruit smooth.

- E. Peduncles recurved.

- F. Fruits aggregated into a solid head; sessile on a recurved flat peduncle.

Mallee 3-6 m high, usually smooth-barked.  
King George Sound to Cape Arid.



1

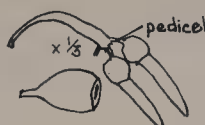
**E. lehmannii** 156  
Bushy Yate or  
Bald I. Marlock





- F. Fruits separate on pedicels on a long, slightly flattened peduncle.

Mallee up to 5-6 m high, with several stems from a stock-like base; bark smooth, cinnamon-brown, except at shedding time.  
Wheatbelt and goldfields area.



19

**E. eremophila**  
Tall Sand Mallee

163

- E. Peduncles erect or spreading, flat.

Mallee up to 2-4 m high. Bark smooth, grey, shedding to yellow-brown; budcap red.  
Stirling Ra. - Ravensthorpe - Salmon Gums.



4

**E. annulata**  
Open-fruited  
Mallee

157

- D. Calyx-tube ribbed and fruit smooth or ribbed.

Mallee 2-3 m high, with smooth grey-brown bark.  
Helena R. - Stirling Ra. - Esperance.



12

**E. falcata**  
Silver or White  
Mallet

160

- C. Budcap ribbed or fluted.

Tall, several-stemmed mallee up to 8 m high, with smooth yellowish-pink to grey bark.  
Dalwallinu-Wyalkatchem-Kellerberrin.



18

**E. stowardii**  
Fluted-horn  
Mallee

162

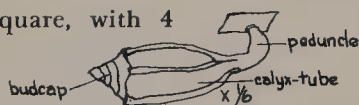
- B. Budcap not twice as long as calyx-tube.

- C. Buds and fruits sessile on peduncles.

- D. Peduncles recurved.

- E. Flower-buds large, occurring singly, bright scarlet.

Small mallee. Calyx-tube  $\pm$  square, with 4 wings.  
Stirling Ra. - Israelite Bay.



49

**E. tetraptera**  
Four-winged  
Mallee

178

- E. Flower-buds small, up to 7 in umbel, usually dark red.

Mallee 2-2.5 m high, forming dense thickets; bark smooth, light brown.  
Ravensthorpe - Bremer Bay.



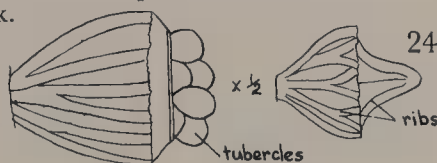
50

**E. nutans**  
Red-flowered  
Moort

178

- D. Peduncles erect.

Fruit top-shaped,  $\pm$  2.5-3.5 cm wide, with large globular tubercles covering valves. Mallee up to 2 m high, with smooth grey bark.  
E. Mt Barren, Whoogarup Ra.



24

**E. coronata**  
Crowned Mallee

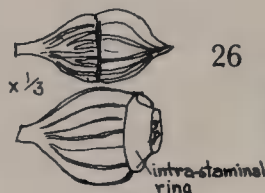
167

## C. Buds and fruits on peduncles and pedicels

## D. Bark smooth.

- E. Fruits large (3-6 cm wide), with prominent intra-staminal ring; budcap, calyx-tube and fruit deeply ribbed; peduncle recurved.

Mallees up to 4 m high, with smooth, greyish bark on trunk; branchlets shining red.  
Dowerin - Wongan Hills area.



26 **E. pyriformis**  
Pear-fruited  
Mallee

168

- E. Fruits small (3-6 mm wide), subglobose to pear-shaped; budcap smooth, conical.

Mallees up to 3 m high, with smooth, grey bark.

Widespread in the Eremaean and Southwest provinces. Fremantle, Geraldton, Kellerber-  
rin, Coolgardie.



97 **E. foecunda**  
Narrow-leaved  
Red Mallee

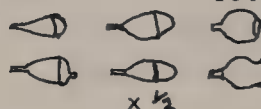
199

- D. Bark rough, at least on the lower trunk, becoming smooth above.

- E. Leaves linear- to narrow-lanceolate; fruits small (3-6 mm wide).

- F. Fruit valves enclosed.

Bark up to  $\pm$  2 m on trunk, rough and grey, then becoming smooth.  
Wheatbelt and goldfields areas.



104 **E. gracilis**  
Snap-and-rattle  
or Yorrell

203

- F. Fruit valves exserted.

- G. Fruit hemispherical or subglobular, faintly striate; budcap conical.

Persistent pale grey, fibrous bark on lower parts of the stems, becoming smooth and grey higher up.  
Goldfields and further east.

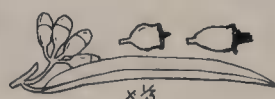


145 **E. oleosa**  
var. **oleosa**  
Giant Mallee

223

- G. Fruit urn-shaped, smooth; budcap hemispherical.

Bark dark grey and rough on trunk up to  $\pm$  3 m, then becoming smooth on rest of trunk and branches which are grey-brown.  
Wheatbelt and goldfields area.

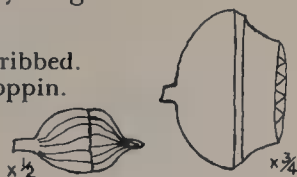


125 **E. plenissima**  
Oil Mallee

213

- E. Leaves lanceolate; fruits fairly large (1.5-2.5 cm wide).

Budcap hemispherical, beaked, ribbed.  
Wyalkatchem, Merredin, Burracoppin.



38 **E. burracoppinensis** 173  
Burracoppin  
Mallee

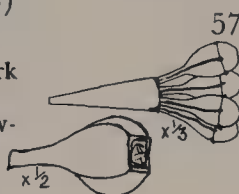
- A. Leaves ovate, ovate-elliptical, oblong or orbicular.



- B. Fruits medium size (1-2 cm wide).

- C. Peduncles flat, broadening towards the top.  
Fruit 4-ribbed, truncate and (like the leaves) powdery grey-white.

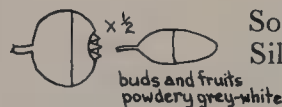
Mallee 2-3 m high, with lower roughish, grey bark becoming smooth and light brown upwards.  
Badgingarra area, Stirling Ra., Grass Patch - Newdegate.



57 **E. tetragona** 181  
Tallerack or  
White-leaved  
Marlock 182

- C. Peduncles (and pedicels) terete; fruit smooth, dome-shaped.

Mallee 3-6 m high, with smooth, red-brown bark.  
Kellerberrin, Southern Cross, Kalgoorlie areas.

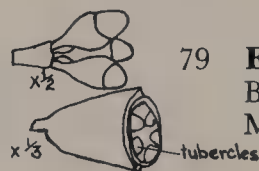


134 **E. crucis** 218  
Southern Cross  
Silver Mallee

- B. Fruits large (2-9 cm wide).

- C. Buds (3 to the umbel), smooth; fruits 2-3 cm wide.

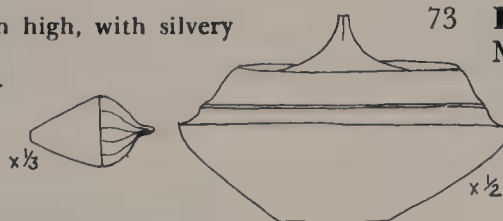
Low straggling shrub 1-2 m high, with smooth, grey bark and  $\pm$  opposite thick grey-green leaves.  
Stirling Ra., Cape Riche - Stokes Inlet.



79 **E. preissiana** 191  
Bell-fruited  
Mallee

- C. Buds solitary, budcap striate; fruits 5-9 cm wide.

Straggling, ragged mallee 2-4 m high, with silvery leaves.  
Geraldton - Bruce Rock - Kulin.



73 **E. macrocarpa** 189  
Mottlecah

FAMILY 74

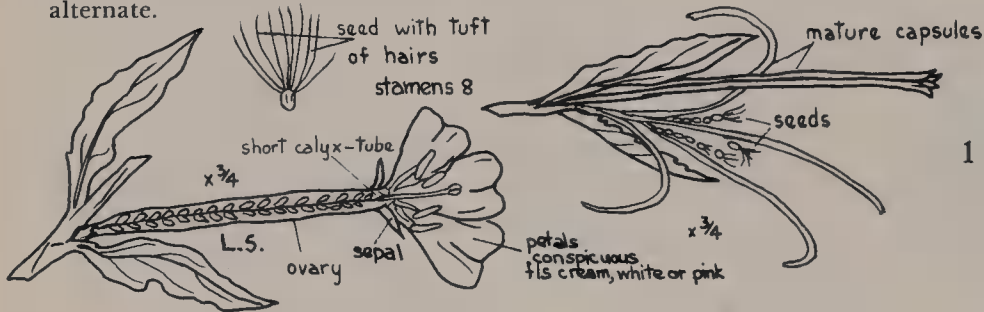
ONAGRACEAE (OENOTHERACEAE)

KEY TO GENERA

Page

- A. Calyx-tube not produced above long ovary;  
sepals 4, deciduous; petals 4,  $\pm$  1 cm long.

Habit: Herbs with annual flowering stems and a  
perennial creeping rhizome; leaves opposite or  
alternate.

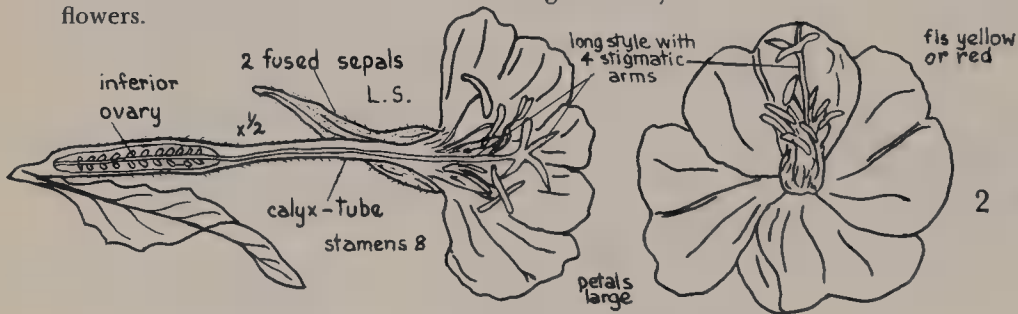


1 **EPILOBIUM**

238

- A. Calyx-tube produced above ovary; sepals 4;  
petals 4, 2-2.5 cm long.

Habit: Herbs with alternate leaves and large axillary  
flowers.



2 **OENOTHERA**

239

KEY TO SPECIES

1 **Epilobium**

(See Raven & Raven 1976)

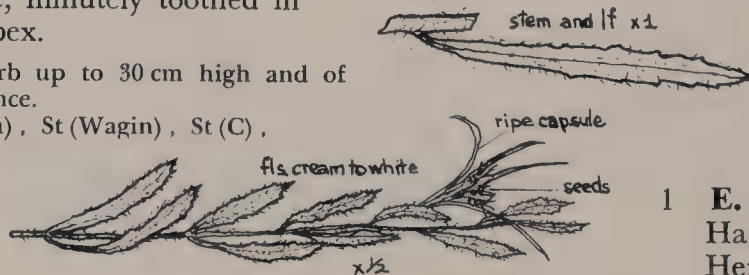
- A. Plant with long spreading villous hairs; leaves  
linear to oblanceolate, minutely toothed in  
upper half or near apex.

Habit: Erect annual herb up to 30 cm high and of  
greyish-white appearance.

Distribn: Da (Perth area), St (Wagin), St (C),

Wa (Metricup).

Flg: Nov-Apr



1 **E. hirtigerum**  
Hairy Willow  
Herb

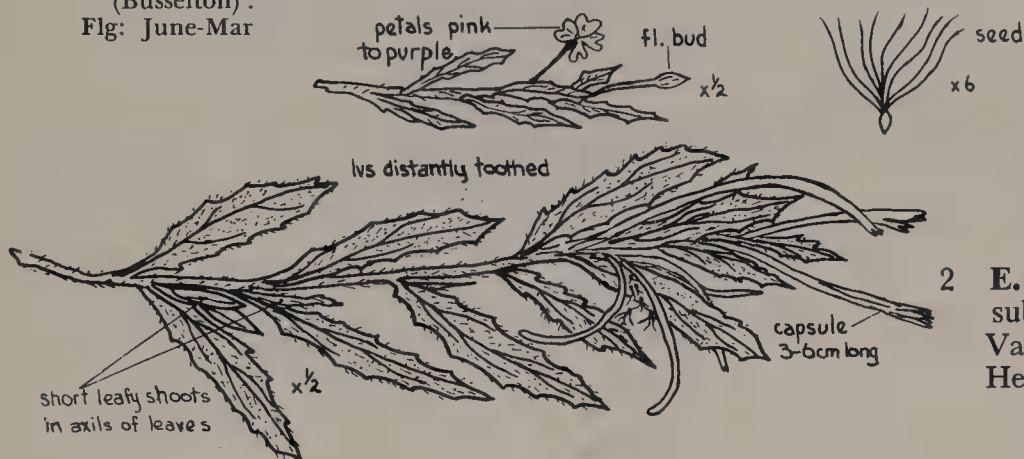
- A. Plant hoary-pubescent or  $\pm$  glabrous; leaves narrow-lanceolate, ovate or narrowly oblong; toothed from apex to base.

- B. Plant very shortly hairy (hoary); leaves acute, mostly alternate.

Habit: Herb 30-60 cm high.

Distribn: Da (Perth area), Wa (Northcliffe), Wa (C) (Busselton).

Flg: June-Mar



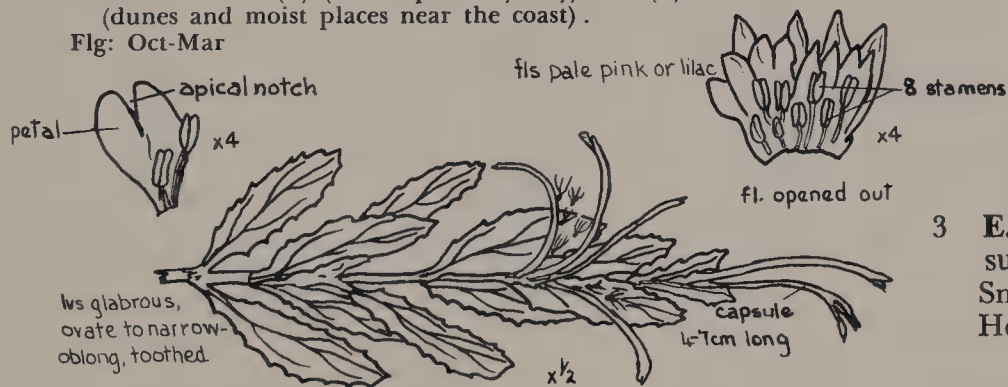
- 2 ***E. billardierianum***  
subsp. ***cinereum***  
Variable Willow  
Herb

- B. Plant glabrous or slightly hairy in upper part; leaves obtuse, mostly opposite.

Habit: Herb 30-60 cm high.

Distribn: Da, Da (C) (Yanchep, Safety Bay), Wa (C) (dunes and moist places near the coast).

Flg: Oct-Mar



- 3 ***E. billardierianum***  
subsp. ***billardierianum***  
Smooth Willow  
Herb

Differs from preceding in the  $\pm$  glandular hairy inflorescence, longer stamens, lanceolate thick leaves and white or pale red-purple petals.

- 4 ***E. billardierianum***  
subsp. ***intermedium***

## 2 *Oenothera*

- A. Flowers yellow to orange, or reddish when fading; leaves entire.

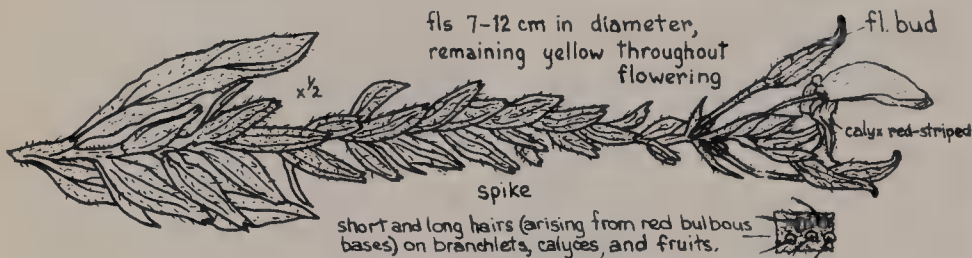
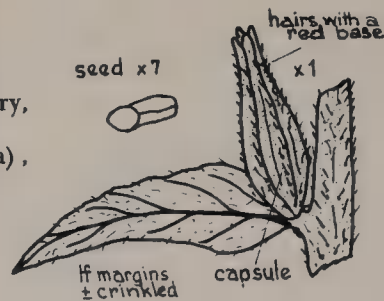


B. Seeds with sharp angles; capsule gradually narrowing upwards.

Habit: Erect perennial herb 30-100 cm high, hairy, with red spots.

Distribn: Garden escape—Da, Da (C) (Perth area), St (C) (Albany), Wa.

Flg: Nov-Mar



\*1 ***O. erythrosepala***  
Evening Primrose

B. Seeds without sharp angles; upper half of capsule larger.



C. Prostrate habit of growth; flowers bright yellow; coastal plant.

Habit: Low bushy perennial.

Distribn: Da (C) (Cottesloe, City Beach: garden escape).

Flg: Oct-Mar



\*2 ***O. drummondii***  
Coastal Evening Primrose

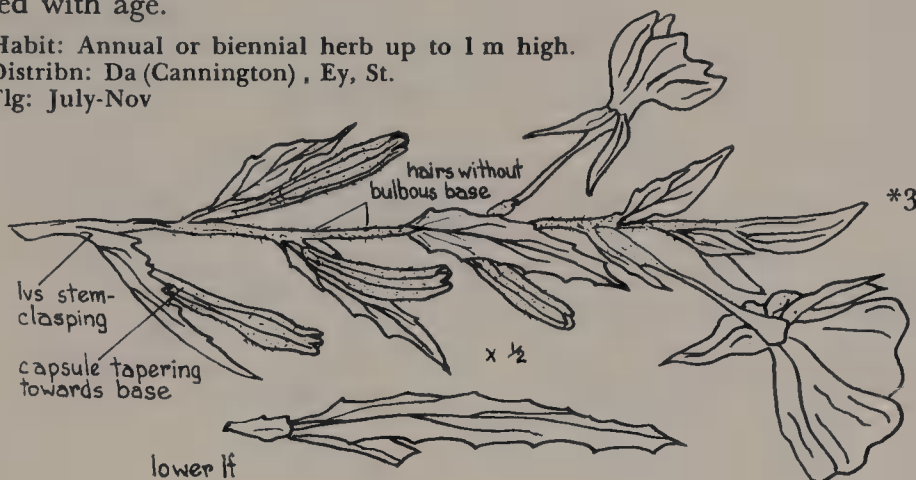


**C. Erect plant; flowers yellow at first, turning red with age.**

Habit: Annual or biennial herb up to 1 m high.

Distribn: Da (Cannington), Ey, St.

Flg: July-Nov



\*3

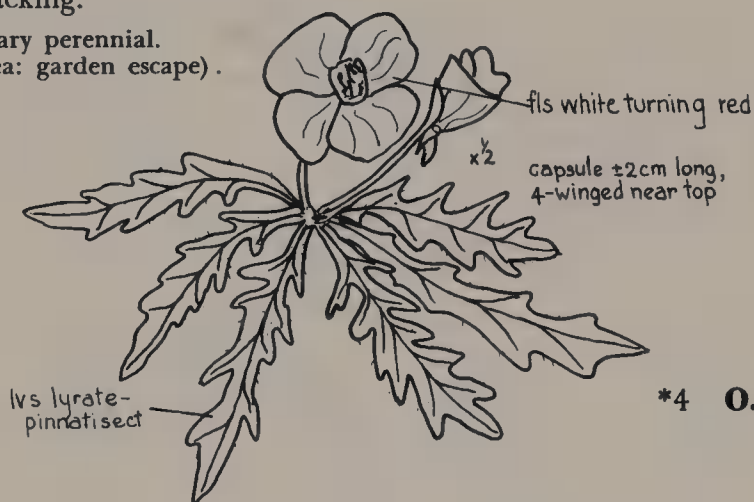
***O. stricta***  
Sweet-scented  
Evening Primrose

**A. Flowers white or red; leaves deeply divided; stems prostrate or lacking.**

Habit: Glabrous or hoary perennial.

Distribn: Da (Perth area: garden escape).

Flg: Oct-Mar



\*4

***O. acaulis***

FAMILY 75  
**HALORAGACEAE**

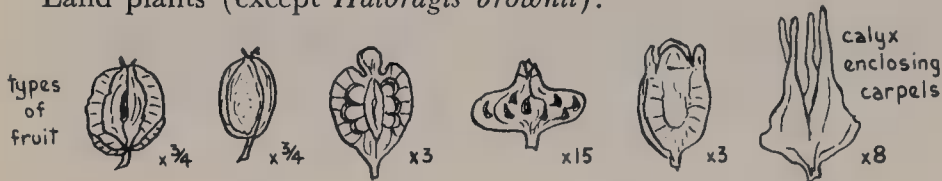
(See Orchard 1975, 1977)

**KEY TO GENERA**

Page

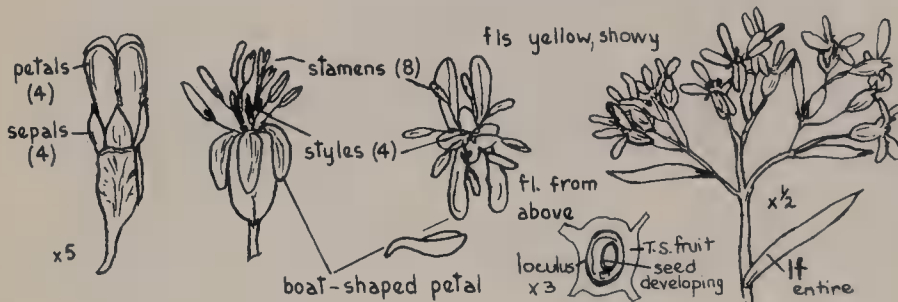
- A.** Fruit a nut-like drupe of coherent carpels; all flowers with petals.

Land plants (except *Haloragis brownii*).



- B.** Flowers in terminal, simple or compound cymose (sometimes racemose) inflorescences; petals boat-shaped; fruit 1-seeded.

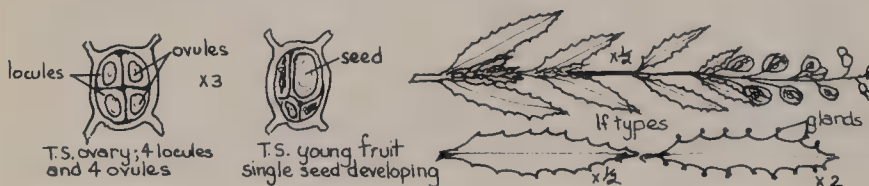
- C.** Leaves entire; inflorescence broad, dense, falsely umbel-like; fruit 1-locular (with 4 ovules, only 1 of which develops into a seed).



**1 GLISCHROCARYON**

**244**

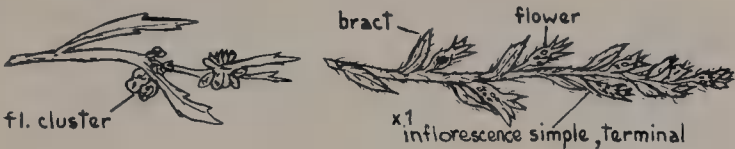
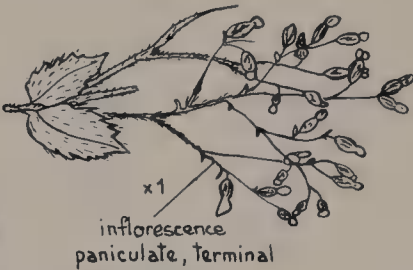
- C.** Leaves serrate; inflorescence narrow, spike-like; fruit 4-locular (with 1 ovule per locule, but only one seed develops).



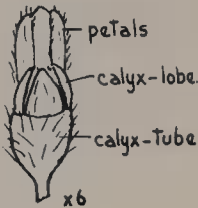
**2 HALORAGODENDRON**

**245**

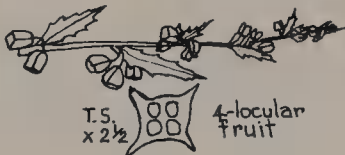
B. Flowers 1, 2 or several, clustered within bracts along the flowering stalk; petals, sepals and styles 2-4; petals hooded or boat-shaped to  $\pm$  flat; stamens 4-8; fruit 1-4-seeded.



C. Calyx-lobes (sepals) shorter than, or  $\pm$  the same length as, the calyx-tube (ovary) ; petals hooded.



D. Fruits 2-4-locular; flowers clustered in dich-  
asial cymes of 2-7 in axils of bracts.

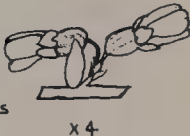
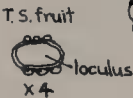
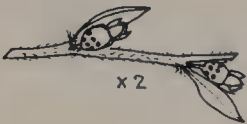


3 HALORAGIS

Page

246

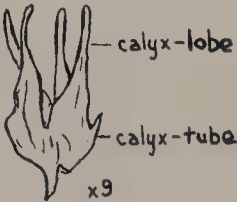
D. Fruits 1-locular; flowers usually solitary  
(rarely 2-3), in axils of bracts.



4 GONOCARPUS

252

C. Calyx-lobes (sepals) much longer than calyx-  
tube (ovary) ; petals boat-shaped or  $\pm$  flat.  
Minute creeping plants with trifid leaves.



5 MEZIELLA

258

A. Fruit breaking into 4 nut-like carpels; flowers  
mostly unisexual; female flowers without petals,  
sepals minute; male flowers with 4 sepals and  
4 hood-shaped petals. Aquatic or swamp plants.



6 MYRIOPHYLLUM

258

## KEY TO SPECIES

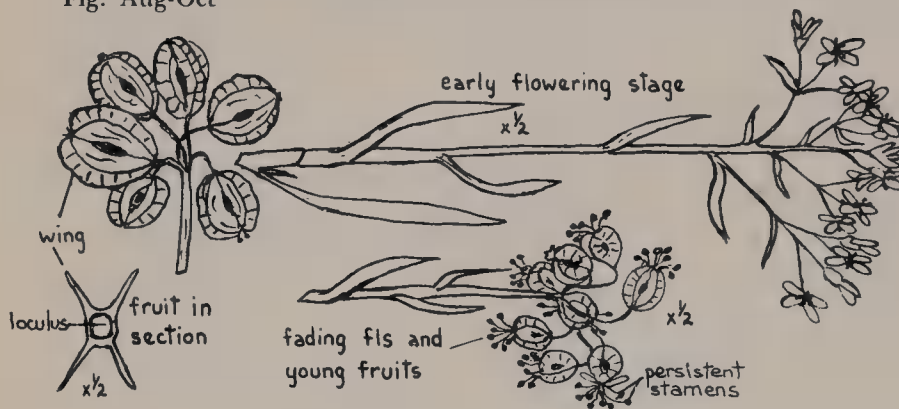
1 *Glischrocaryon*A. Fruit with 4 prominent wings.

## B. Petals 4, hooded, bright yellow or sometimes reddish-yellow.

Habit: Erect glabrous perennial herb 30 cm-1 m high, with numerous stems; mature leaves oblanceolate, 3-6 cm long; juvenile leaves linear-lanceolate, 1-2 cm long.

Distribn: Av (Tutanning Res.), Co (Merredin), Da (Perth area, Darling Ra.), Ir, Ir (C) (Geraldton), St (Narrogin), Wa (Vasse R.).

Flg: Aug-Oct



1 ***G. aureum***  
**var. *aureum***  
Common Pop-flower

Mature leaves linear to linear-lanceolate,  $\pm$  1-4 cm long; juvenile leaves  $\pm$  terete, 6-7 mm long.

Distribn: Widely distributed in all botanical districts in the area to which the key applies.

Flg: Aug-Nov

Note. Orchard suggests that it may prove to be a hybrid between *G. aureum* var. *aureum* and *G. roei*.

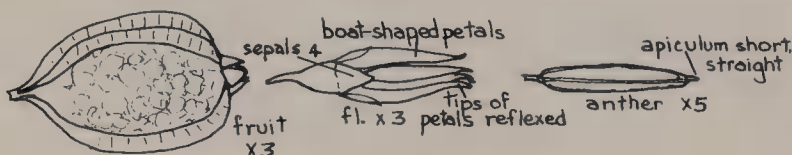
1a ***G. aureum***  
**var. *angustifolium***

## B. Petals 4, boat-shaped, tips reflexed in bud, usually cream-pale yellow coloured.

Habit: Glabrous, clump-forming perennial herb, 75-90 cm high.

Distribn: An, Av, Co, Da, Ey, Ey (C), Ir, Ir (C), Le.

Flg: Sept-Dec



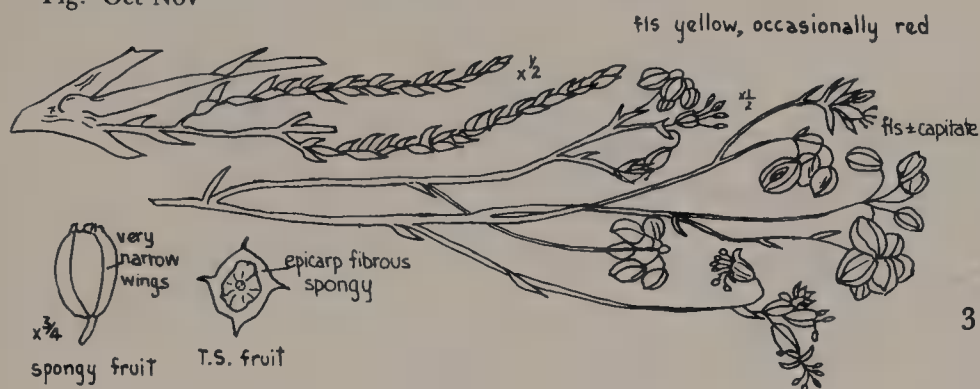
2 ***G. flavescens***

- A. Fruit inflated (almost globular) by spongy fibrous material and with 4 scarcely prominent wings.

Habit: Erect glabrous perennial herb 30-40 cm high.

Distribn: Ey, Ey (C) -St (C) - (Stokes Inlet to Albany).

Flg: Oct-Nov



3 **G. roei**

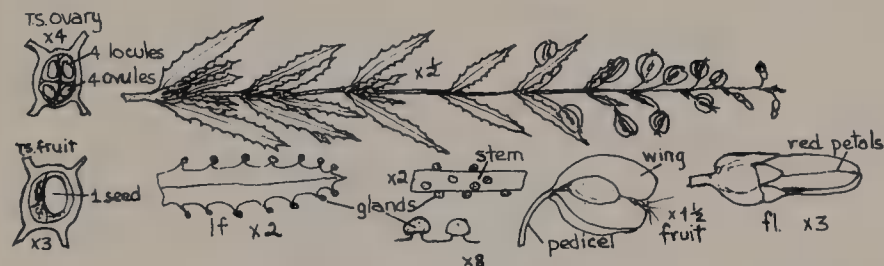
## 2 *Haloragodendron*

- A. Fruits 4-winged; petals red; plants glandular.

Habit: Small glabrous shrub 1-1.5 m high, with 4-angled stems bearing numerous scattered red glands.

Distribn: Co (Southern Cross, Hatters Hill), Ey (Ravensthorpe), Ey (C) (Hopetoun, Esperance).

Flg: Sept-Nov



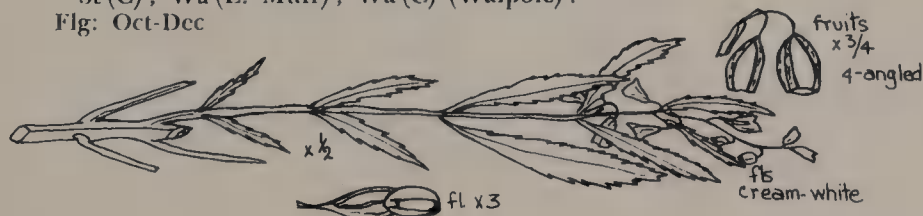
1 **H. glandulosum**  
Glandular Raspwort

- A. Fruits not winged but 4-angled; petals cream; plants smooth not glandular.

Habit: Erect shrub 2-3 m high, glabrous. Stems and branches acutely angular or ribbed.

Distribn: Ey (C) (east of Esperance), Rech. Arch., St (C), Wa (L. Muir), Wa (C) (Walpole).

Flg: Oct-Dec



2 **H. racemosum**  
Shrubby Raspwort

### 3 *Haloragis*

A. Fruit prominently winged over its entire length.

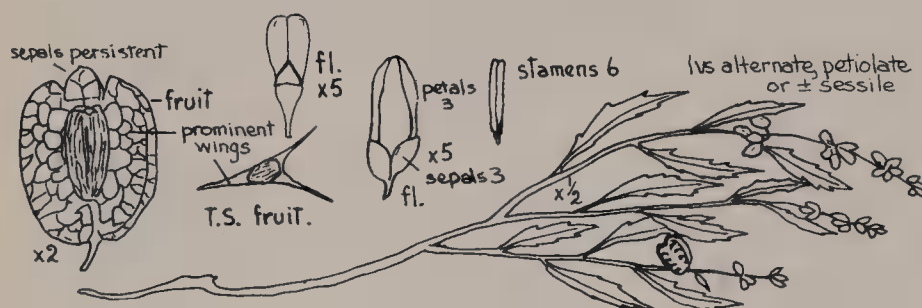
B. Flower parts in 3s; fruits 3-winged.

C. Wings entire.

Habit: Herbaceous annual with erect glabrous stems, 20-40 cm high.

Distribn: An (Menzies), An-Ir (Perenjori), Co (Kalgoorlie).

Flg: July-Dec



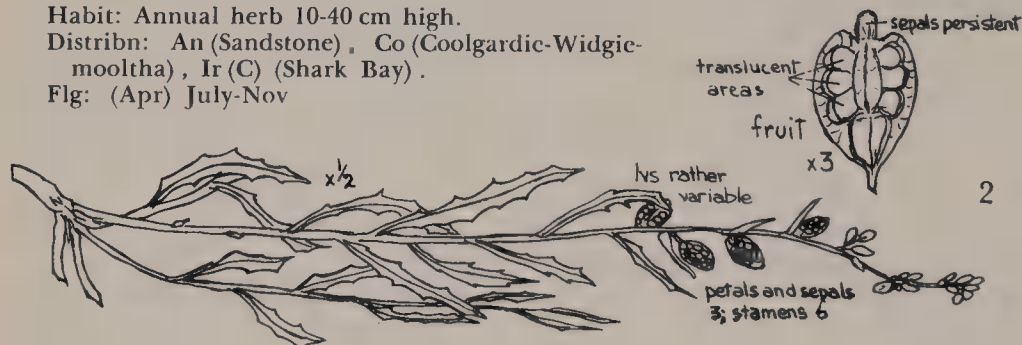
1 *H. gossei*

C. Wings with 3-4 holes or translucent areas (windows); flowers in clusters in axils of bracts but often only 1 fruit develops per axil.

Habit: Annual herb 10-40 cm high.

Distribn: An (Sandstone), Co (Coolgardie-Widgimooltha), Ir (C) (Shark Bay).

Flg: (Apr) July-Nov



2 *H. trigonocarpa*

B. Flower parts in 4s; fruit 4-winged.

C. Leaves distinctly petiolate (petioles over 5 mm long).



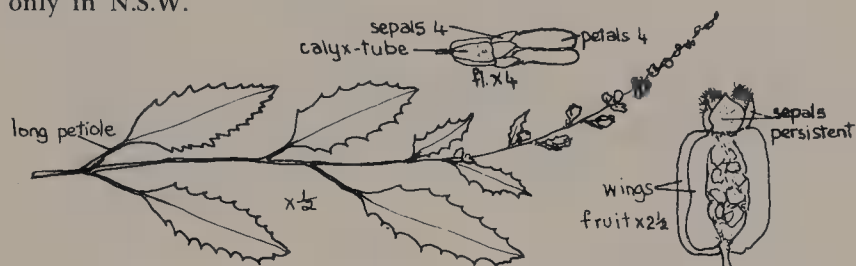
## D. Wings entire, oblong.

Habit: Annual herb with  $\pm$  erect stems branching from the base, 30-45 cm high.

Distribn: An-Ir (Morawa), An (Ularring).

Flg: May-Aug

Note. *H. odontocarpa* forma *odontocarpa* occurs only in N.S.W.

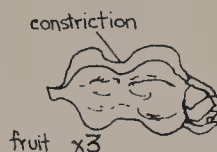


3a *H. odontocarpa*  
forma **pterocarpa**

## D. Wings constricted in centre.

Distribn: An-Co (Comet Vale).

Flg: Sept



3b *H. odontocarpa*  
forma **octoforma**

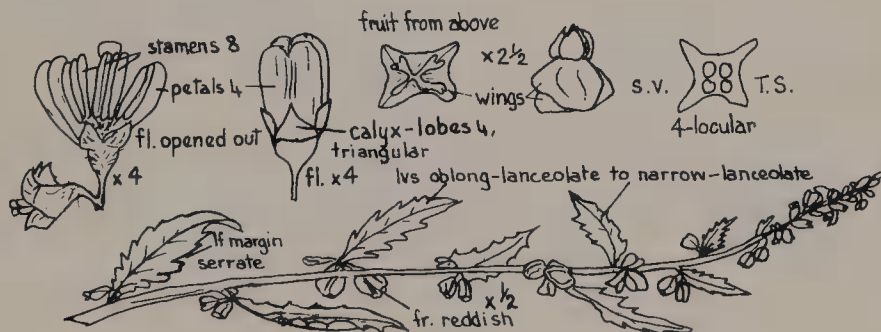
C. Leaves  $\pm$  sessile (petioles if present under 5 mm long).

Habit: Perennial herb up to 50 cm high.

Distribn: Ey (C) (Esperance), Rech. Arch., St (C) (Albany).

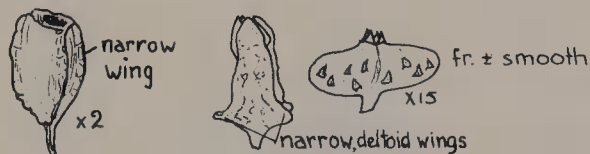
Flg: Oct-Nov

Note. This is the only form of the species which occurs outside S. Aust. Orchard (1977) considers that it is very close to *H. digyna* (no. 5).



4 *H. acutangula*  
forma **occidentalis**

## A. Fruit with short and narrow wings, or 4-ribbed, 4-angled or smooth.



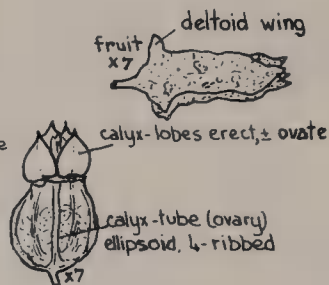
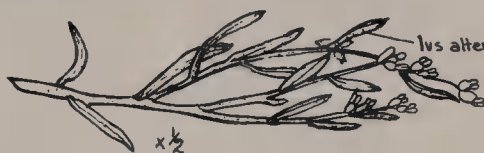
B. Calyx-lobes (sepals) 4; stamens 8 (rarely 6).

(alternate B p.251)

C. Leaves entire or  $\pm$  weakly-toothed near apex.

D. Herb. Fruits  $\pm$  cylindric, glabrous, 1-2-locular.

Habit: Perennial herb 20-40 cm high,  $\pm$  glabrous.  
 Distribn: Ey (C) (Esperance), Wa (C) (Busselton area). Coastal dunes.  
 Flg: Nov-Dec



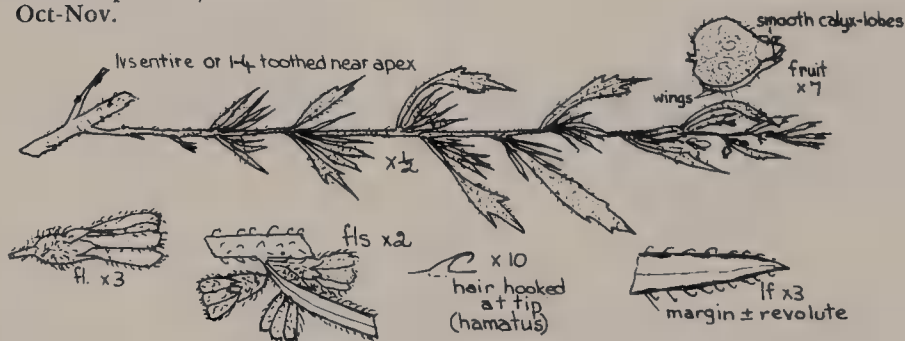
5 ***H. digyna***

D. Shrub. Fruit depressed-globose, covered (apart from calyx-lobes) with hooked hairs; 2-4-locular.

Habit: Erect perennial shrub 35-55 cm high; stems and leaves covered with fine hooked hairs.

Distribn: Co-Ey (Norseman - Esperance Rd, Ravensthorpe area).

Flg: Oct-Nov.



6 ***H. hamata***

C. Leaves serrate, toothed or lobed.

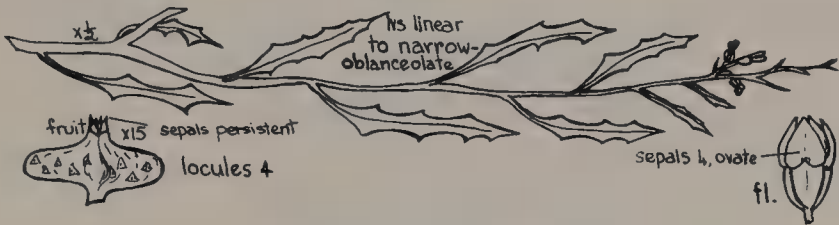
D. Styles and ovules 4.

(alternate D p.250)

E. Fruit at least as broad as long.

F. Fruit depressed-globular (flattened, mal-low-like) ; leaves glabrous, strongly toothed.

Habit: Herb 20-30 cm high, profusely branched.  
Distribn: Da (Swan R. district).  
Flg: Not recorded

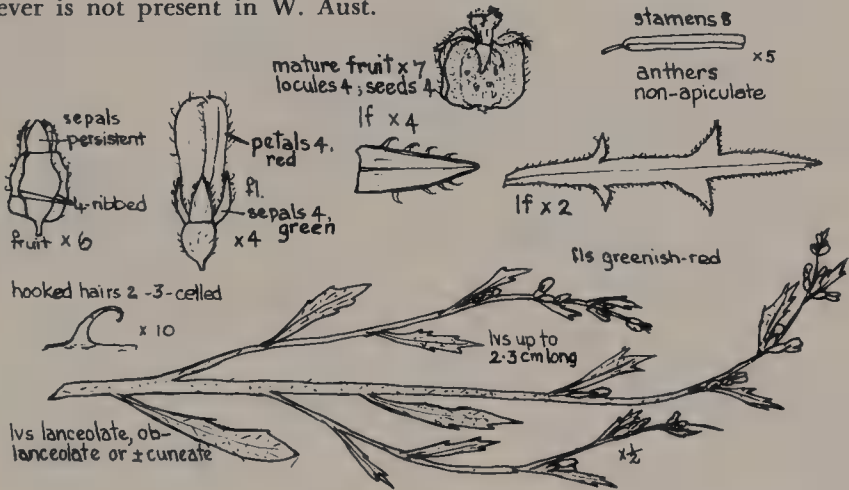


7 *H. platycarpa*

F. Fruit oblong, usually shortly 4-winged, sometimes 4-ribbed; leaves scabrous, coarsely serrate.

Habit: Perennial herb 25-35 cm high. Leaves harsh in texture.  
Distribn: Co (Widgiemooltha-Norseman).  
Flg: Aug-Oct

Note. Closely related to *H. aspera*, which however is not present in W. Aust.

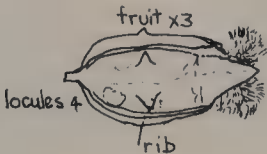


8 *H. dura*

E. Fruit longer than broad.

F. Calyx-lobes (sepals) deltoid.

Distribn: An (Menzies), Co (int).  
Flg: Aug-Sept



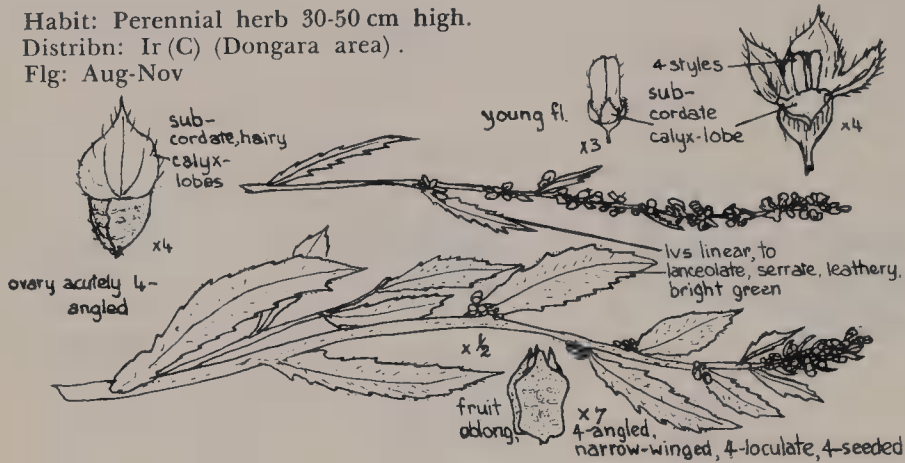
3c *H. odontocarpa*  
forma *rugosa*

F. Calyx-lobes (sepals)  $\pm$  cordate with acuminate tips.

Habit: Perennial herb 30-50 cm high.

Distribn: Ir (C) (Dongara area).

Flg: Aug-Nov



9 ***H. foliosa***

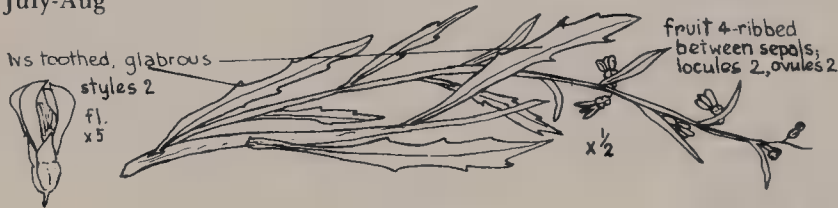
D. Styles and ovules 1, 2 or 3.

E. Plant glabrous.

Habit: Perennial herb 30-60 cm high, sparsely branched.

Distribn: Da (C) (Swan R.).

Flg: July-Aug



10 ***H. scoparia***

E. Plant scabrous.

F. Fruits densely scabrous with hooked hairs, smooth-surfaced or weakly 4-ribbed.



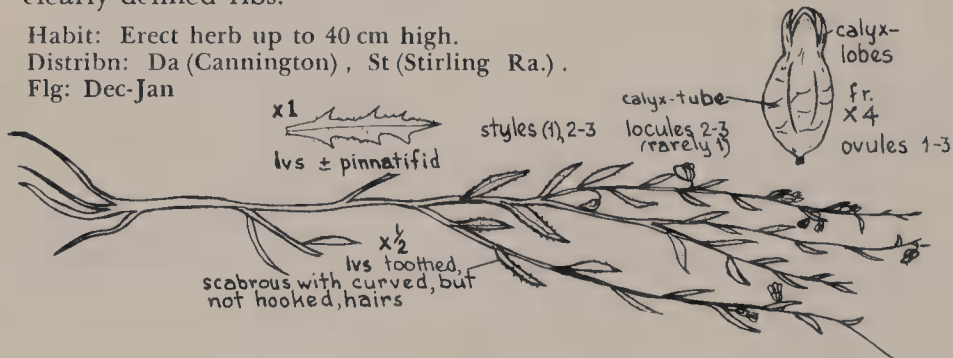
6 ***H. hamata***  
(see p. 248)

F. Fruits glabrous,  $\pm$  smooth, without clearly-defined ribs.

Habit: Erect herb up to 40 cm high.

Distribn: Da (Cannington), St (Stirling Ra.).

Flg: Dec-Jan



11 ***H. aculeolata***

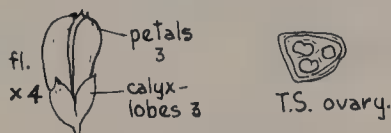
B. Calyx-lobes (sepals) less than 4; stamens less than 8.

C. Calyx-lobes 3; stamens 6.

Habit: Annual herb, glabrous, erect, 20-30 cm high.

Distribn: Da (Swan R., Darling Ra.).

Flg: Oct-Dec



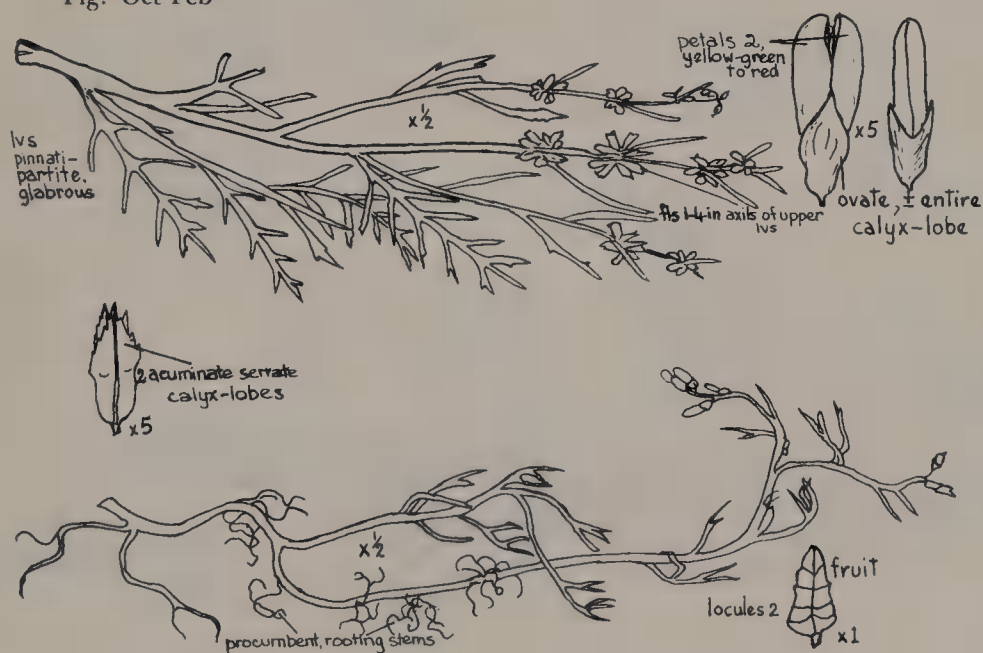
12 ***H. tenuifolia***

C. Calyx-lobes 2; stamens 4.

Habit: Glabrous herb-like water-plant with procumbent stems, up to 30 cm long.

Distribn: Av (York), Da-Da (C) (Herdsmen Lake, Cannington), Le (C), St (C) (Albany), Wa (Pemberton), Wa (C) (Busselton, Cape Leeuwin).

Flg: Oct-Feb



13 ***H. brownii***  
Swamp Raspwort

Note. Plants with broadly-triangular, entire calyx-lobes (earlier under *H. breviloba*) are now included under *H. brownii* (Orchard 1975).

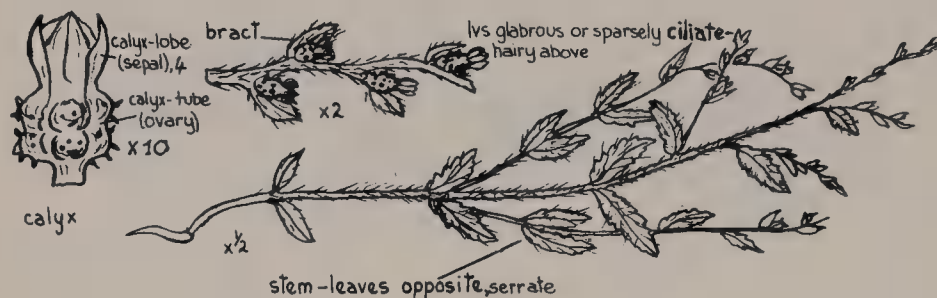
4 *Gonocarpus*

- A. Calyx urn-shaped, warty, with smooth neck; flowers minute,  $\pm$  sessile; petals, stamens and styles 4.

Habit: Annual herb 5-15 cm high.

Distribn: Av (Northam area), Da (Midland Junction), Ey (Ravensthorpe), Ey (C) (Stokes Inlet), Ir (C) (Geraldton area), Le (Watheroo), St (Broomehill).

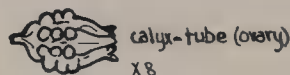
Flg: Aug-Nov



1 *G. nodulosus*

- A. Calyx not urn-shaped; stamens 6 or more.

- B. Calyx-tube (ovary) with prominent warts.

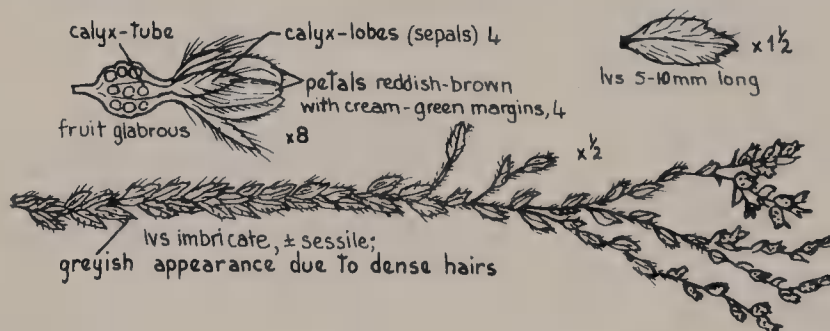


- C. Calyx-lobes (sepals) linear-triangular,  $\pm$  as long as the tube, and covered with dense long hairs.

Habit: Annual or perennial herb, 7-30 cm high.

Distribn: An (Ularring), Co (east of Kalgoorlie), Ir (C) (Kalbarri).

Flg: Oct-Nov



2 *G. confertifolius*  
var. *confertifolius*

Leaves 2.5-4 mm long; fruit scabrous.

Distribn: An (Menzies, Sandstone), Co (Merredin, Coolgardie).

Flg: Aug-Nov

2a *G. confertifolius*  
var. *helmsii*

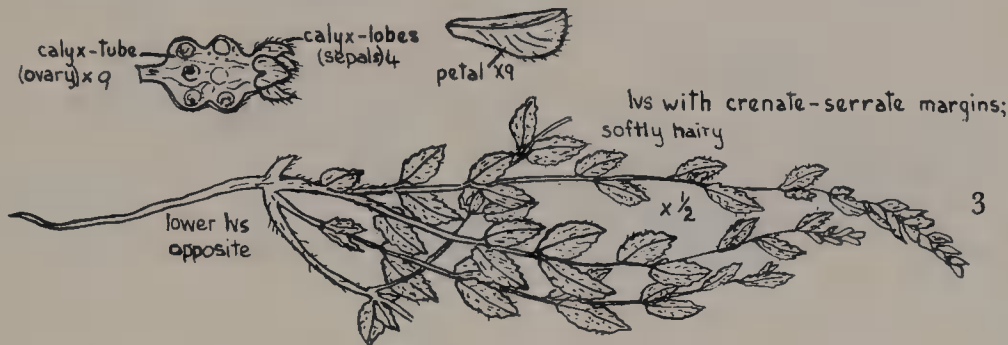


- C. Calyx-lobes (sepals) broadly triangular, shorter than the tube.

Habit: Erect herb,  $\pm$  15 cm high, with stems branching at the base.

Distribn: Ey (C) (Israelite Bay).

Flg: Not recorded



3 *G. pycnostachyus*

- B. Calyx-tube (ovary) without prominent warts (although some warts may be present).

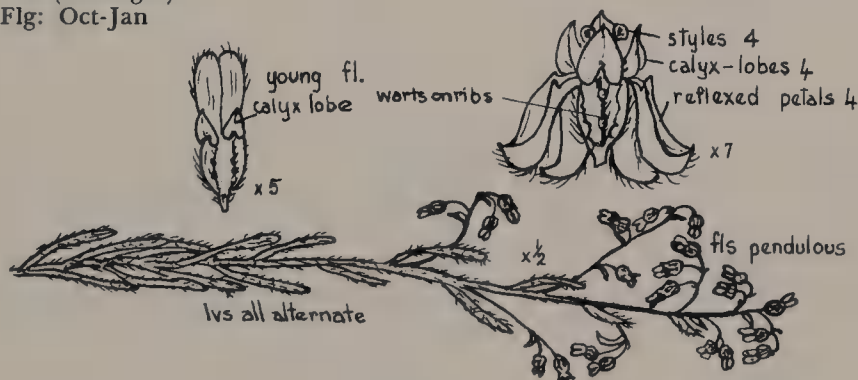
- C. Stem-leaves alternate.

- D. Calyx-lobes (sepals) very cordate; ribs of calyx-tube  $\pm$  warty; petals reflexed at maturity, persistent.

Habit: Perennial herb 20-45 cm high; stems sparsely hairy.

Distribn: Av (Moora, Beverley), Da (Darling Ra.), St (Narrogin).

Flg: Oct-Jan



4 *G. cordiger*

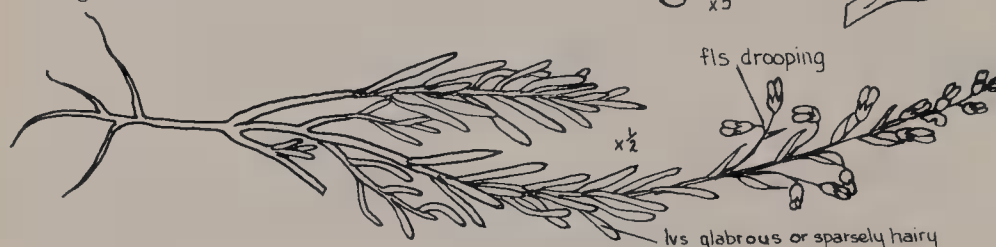
- D. Calyx-lobes (sepals) ovate-triangular or deltoid; ribs of calyx-tube smooth (not warty).

- E. Leaves terete, succulent, 1-3.5 cm long; flowers bisexual.

Habit: Erect perennial herb 15-40 cm high.

Distribn: Da-Da (C) (Kings Park, Cannington, Moore R.), Le (C) (Mullering Brook), Ir (C) (Arrowsmith R.).

Flg: Oct-Nov



5 *G. pithyoides*

- E. Leaves linear or bract-like, 5-10 mm long; flowers male and bisexual, apparently on distinct plants.

Habit: Erect clump-forming perennial herb with slender stems, up to 40 cm high and bearing a few leaves.

Distribn: Ey (C) (Cape Le Grand Nat. Pk), St (C) (Albany). Swampy areas.

Flg: Dec



6 *G. simplex*

- C. Stem-leaves opposite (sometimes the upper ones may be alternate).

- D. Plant hairy with spreading hairs.

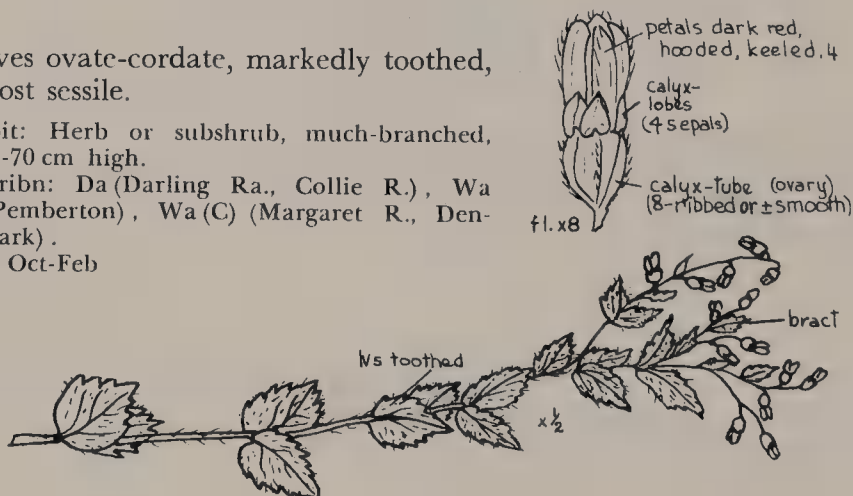
- E. Floral leaves and small bracts alternate.

- F. Leaves ovate-cordate, markedly toothed, almost sessile.

Habit: Herb or subshrub, much-branched, 25-70 cm high.

Distribn: Da (Darling Ra., Collie R.), Wa (Pemberton), Wa (C) (Margaret R., Denmark).

Flg: Oct-Feb



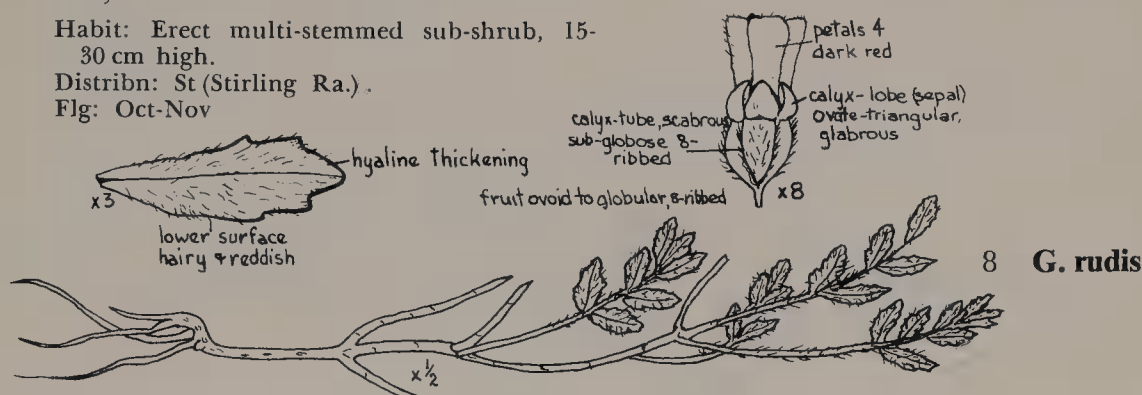
7 *G. benthamii*

- F. Leaves obovate-oblong to almost lanceolate,  $\pm$  entire or with a few teeth present, sessile.

Habit: Erect multi-stemmed sub-shrub, 15-30 cm high.

Distribn: St (Stirling Ra.).

Flg: Oct-Nov

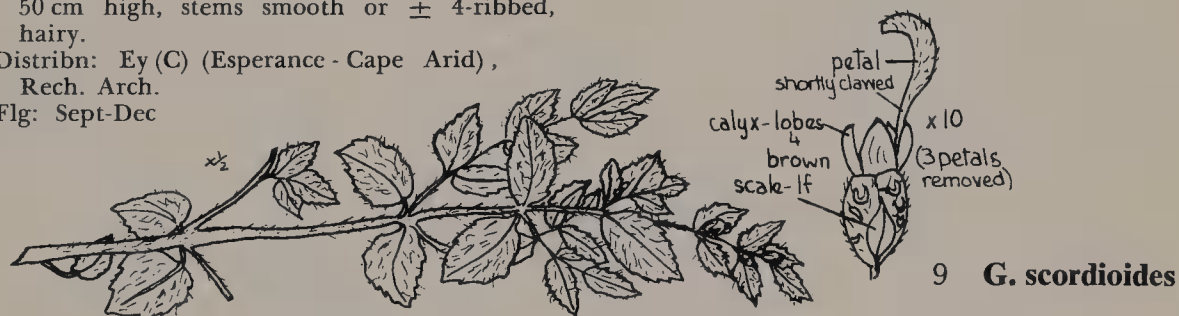


- E. Floral leaves and small bracts nearly all opposite; leaves elliptic, serrate, hairy (rarely glabrous above).

Habit: Erect perennial herb or small shrub, 10-50 cm high, stems smooth or  $\pm$  4-ribbed, hairy.

Distribn: Ey (C) (Esperance - Cape Arid), Rech. Arch.

Flg: Sept-Dec



- D. Plant glabrous or with only a few scattered hairs.

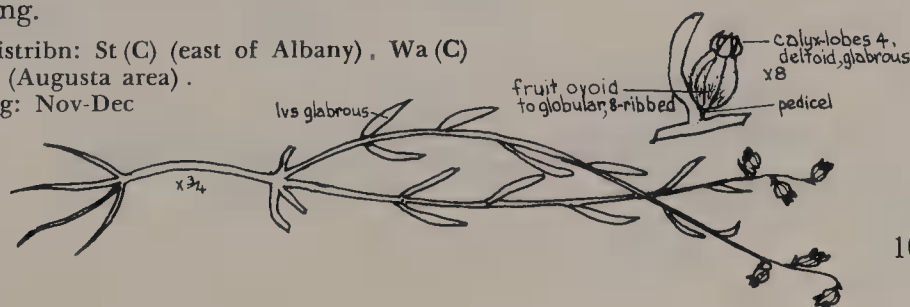
- E. Flower parts in 4s.

- F. Leaves  $\pm$  entire, sessile, glabrous; lower ones opposite, upper alternate.

- G. Prostrate annual herb up to 5 cm high; stems 10 cm long; leaves linear, 7-8 mm long.

Distribn: St (C) (east of Albany), Wa (C) (Augusta area).

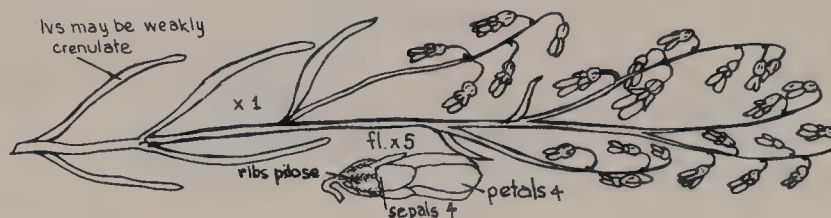
Flg: Nov-Dec



G. Stiff, erect plant, 40-65 cm high, with profusely-branched inflorescence; leaves narrow-linear to terete, 2-5 cm long.

Distribn: Da-Da (C) (Bayswater, Collie, Bridgetown), Ey (C) (Fitzgerald R. Nat. Pk), St (Mt Barker), St (C) (Cape Riche), Wa (C) (Augusta).

Flg: Nov-Jan



11 *G. paniculatus*

F. Leaves with serrate, toothed or crenulate margins.

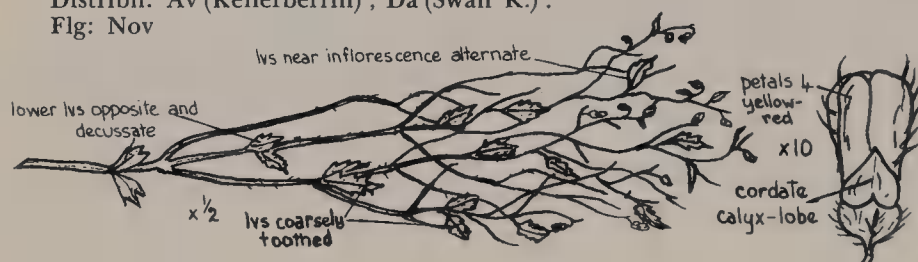
G. Leaves narrow to broad-ovate, not much longer than broad.

H. Calyx-lobes (sepals) cordate.

Habit: Erect herb up to 30 cm high; stems 4-ribbed, sparsely hairy.

Distribn: Av (Kellerberrin), Da (Swan R.).

Flg: Nov



12 *G. intricatus*

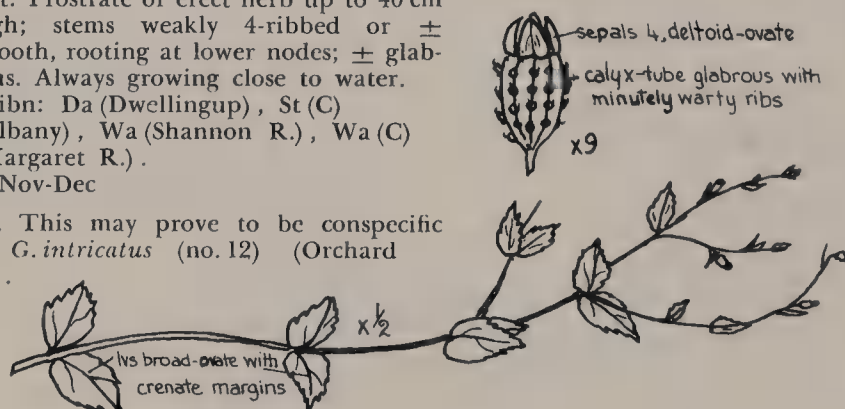
H. Calyx-lobes (sepals) deltoid to ovate.

Habit: Prostrate or erect herb up to 40 cm high; stems weakly 4-ribbed or  $\pm$  smooth, rooting at lower nodes;  $\pm$  glabrous. Always growing close to water.

Distribn: Da (Dwellingup), St (C) (Albany), Wa (Shannon R.), Wa (C) (Margaret R.).

Flg: Nov-Dec

Note. This may prove to be conspecific with *G. intricatus* (no. 12) (Orchard 1977).



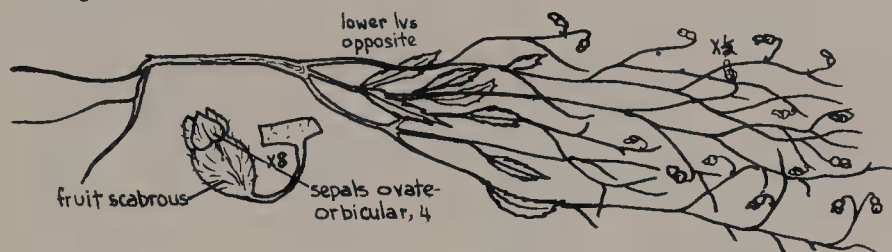
13 *G. diffusus*

- G. Leaves oblanceolate or wedge-shaped, longer than broad.

Habit: Erect herb 10-15 cm high; stems not ribbed,  $\pm$  glabrous.

Distribn: St (L. Wagin).

Flg: Not recorded



14 ***G. trichostachyus***

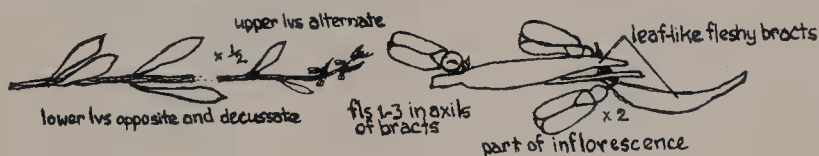
- E. Flower parts in 3s.

Habit: Prostrate, ascending or erect perennial herbs or small shrubs; stems 4-ribbed, glabrous, 15 cm-1 m high; leaves flat, lanceolate-oblanceolate,  $\pm$  entire to strongly serrate. Grows in wet or boggy places.

- F. Leaves 1.5-2 cm long; slender diffuse herb up to 15 cm high.

Distribn: Wa (C) (Wilson Inlet).

Flg: Dec



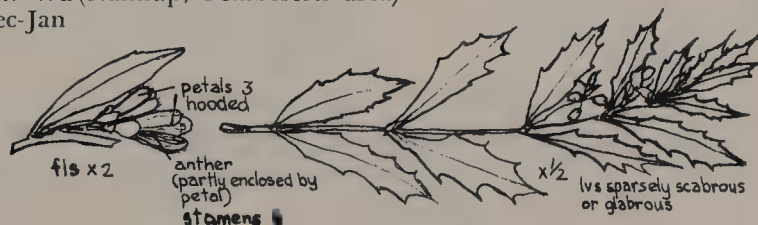
15 ***G. hexandrus***  
subsp. ***hexandrus***

- F. Leaves 3-5 cm long; weak, multi-stemmed shrub up to 1 m high, growing on the banks of streams.

- G. Leaves strongly serrate towards apex, teeth 1-3 mm long, glabrous or scabrous.

Distribn: Wa (Nannup, Pemberton area).

Flg: Dec-Jan



15a ***G. hexandrus***  
subsp. ***serratus***

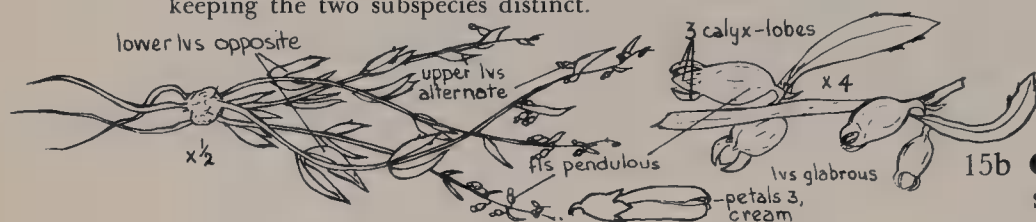


G. Leaves weakly-serrate towards apex, teeth 0.5 mm long, glabrous.

Distribn: Da-Da (C) (Swan R., Lowden),  
St (C) (King George Sound), Wa-Wa (C)  
(Pemberton, Margaret R. area).

Flg: Oct-Jan

Note. Orchard (1977) noted that leaf shape and size are very variable in his later collections of this and the preceding subspecies and that this casts doubt on the validity of keeping the two subspecies distinct.



15b **G. hexandrus**  
subsp. **integrifolius**

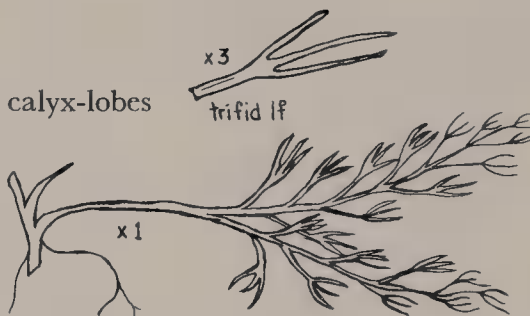
## 5 *Meziella*

Leaves thread-like, 3-pronged; calyx-lobes (sepals), stamens and petals 4.

Habit: Glabrous herb, up to 3 cm high with creeping stems.

Distribn: St (C) (Albany area).

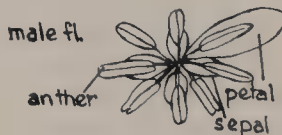
Flg: Oct



**M. trifida**

## 6 *Myriophyllum* (See Aston 1973) (WATER MILFOILS)

A. Stamens (in male flowers) 8; anthers linear; stems long.



(alternate A p. 260)

B. Leaves entire, opposite or alternate, never in whorls.

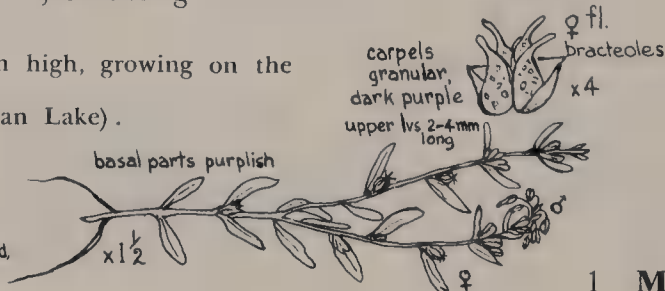
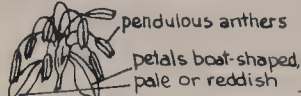
C. Lower leaves opposite, upper ones alternate; anthers pendulous; petals on male flowers boat-shaped, white to red, becoming deflexed.

Habit: Small herb 4-5 cm high, growing on the margins of swamps.

Distribn: Da (C) (Herdsmen Lake).

Flg: Dec

part of male flower x3



1 **M. tillaeoides**

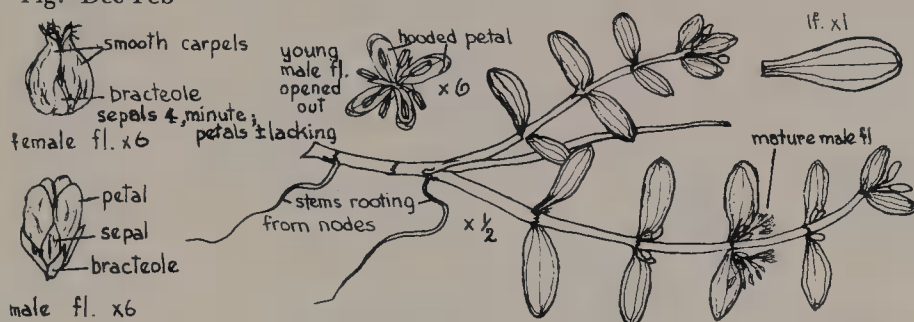


- C. Leaves all opposite, obovate-oblong; anthers erect; petals on male flowers pink, hooded.

Habit: Creeping plant growing in mud of swamps.

Distribn: Ey (C), St (C), Wa (C).

Flg: Dec-Feb



2 ***M. amphibium***  
**var. *latifolium***  
Broad-leaf Water  
Milfoil

- B. Leaves dissected, all in whorls or the upper ones opposite.

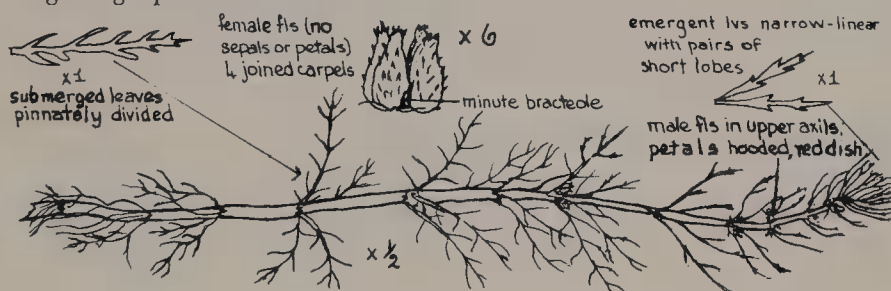
- C. Leaves all in whorls.

- D. Upper (emergent) leaves not markedly different from lower submerged ones.

Habit: Perennial aquatic with long stems; leaves dark green, in whorls of 4-8; plant  $\pm$  stiff, and rigid.

Distribn: Da-Da (C) (Cannington, Guildford, Donnybrook), St (C) (Albany).

Flg: Aug-Apr



3 ***M. propinquum***  
Common  
Water Milfoil

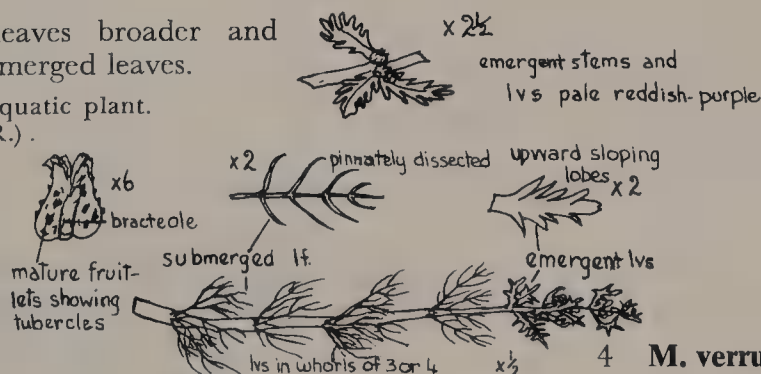
- D. Upper (emergent) leaves broader and shorter than lower submerged leaves.

Habit: Slender delicate aquatic plant.

Distribn: Ir (Murchison R.).

Flg: Sept-Apr

Note. *M. elatinoides* (emergent leaves entire) has been collected near Busseton (Vasse R.) 1963. It is considered by Aston to be probably an introduction from the eastern states.



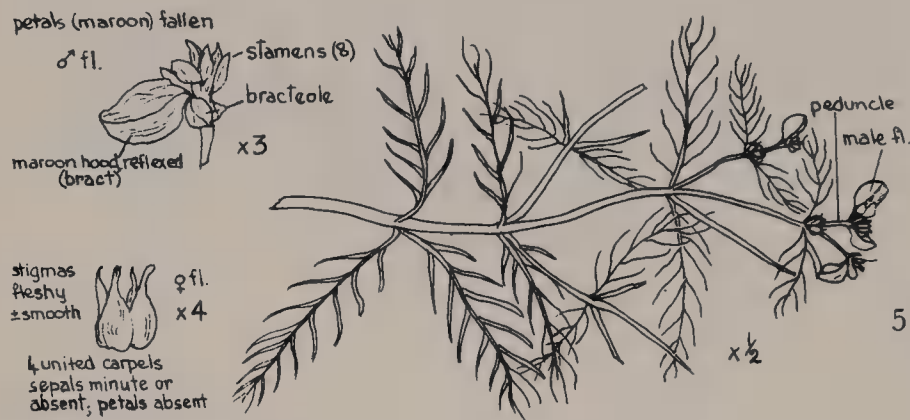
4 ***M. verrucosum***  
Red Water Milfoil

- C. Upper leaves opposite, lower ones in whorls of 3; all pinnatisect into capillary segments; male flowers with a conspicuous hooded bract.

Habit: Submerged water-plant with very long, much-branched stems.

Distribn: Ey (C), St (C) (Albany).

Flg: Sept-Feb



5 ***M. muelleri***  
Hooded  
Water Milfoil

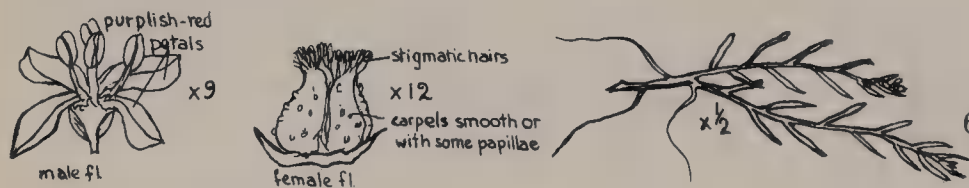
- A. Stamens (in male flowers) 2-4; anthers ovoid; stems short.

- B. Leaves entire; carpels smooth or minutely papillose.

Habit: Small plant up to 5 cm high.

Distribn: Da (C) (Guildford), Ey (C) (Hamersley R., E. Mt Barren).

Flg: Aug-Nov



6 ***M. integrifolium***  
Small Water Milfoil

- B. Leaves sometimes with a few lobes; carpels covered with prominent papillae.

Habit: Minute plant  $\pm$  2.5 cm high.

Distribn: Da (C) (Cannington), Wa (C) (Geographic Bay).

Flg: Oct-Nov

Note. This may prove to be conspecific with *M. integrifolium*.



7 ***M. drummondii***

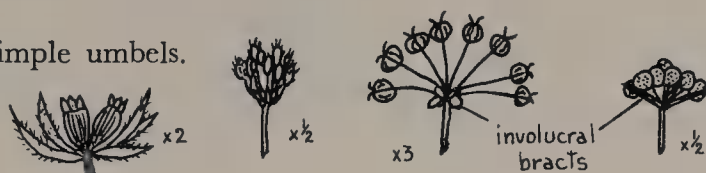
FAMILY 76  
**APIACEAE (UMBELLIFERAE)**

**KEY TO GENERA**

- A. Flowers in simple, compound or irregular umbels; not in heads.

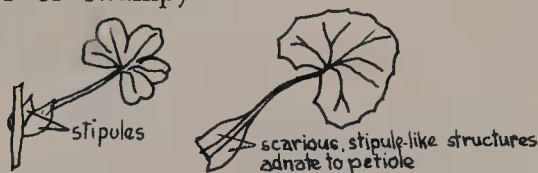
(alt. A see p. 265)

- B. Flowers in simple umbels.



(alt. B see p. 263)

- C. Plants with thin dry stipules (or stipule-like structures), growing in water or swampy places.



- D. Leaves flat,  $\pm$  circular, heart-shaped, peltate or deeply divided into 3-5 segments; fruits glabrous or ciliate.



Page

- E. Involucral bracts very small or absent; each fruitlet (half fruit) 3-5-ribbed.

1 **HYDROCOTYLE** 266

- E. Involucral bracts conspicuous; each fruitlet 7-9-ribbed.

2 **CENTELLA** 273

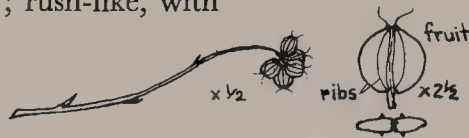
- D. Leaves wedge-shaped with 2-3 lobes; fruit covered with barbed bristles.

3 **NEOSCIADIUM** 274



- C. Plants without distinct stipules.

- D. Plants leafless or almost so; rush-like, with  
± terete stems.

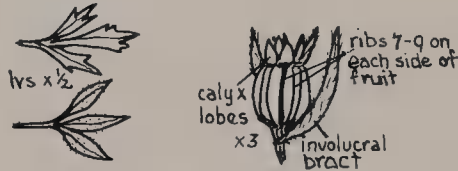


4 **PLATYSACE**  
(*P. haplosciadia*)

274

- D. Plants with well-developed leaves.

- E. Calyx-lobes (sepals) and involucre bracts  
present; leaves 3-partite.



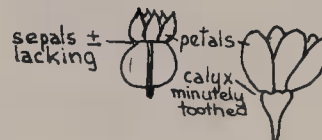
5 **XANTHOSIA**  
(*X. pusilla*,  
*X. fruticulosa*)

280

283

284

- E. Calyx-lobes (sepals) lacking or repre-  
sented by minute teeth; involucre bracts  
if present are minute.

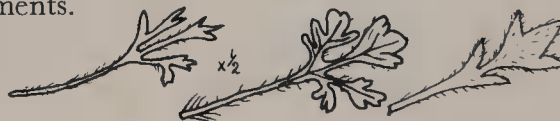


- F. Leaves divided into 3 wedge-shaped,  
2-3-lobed segments.

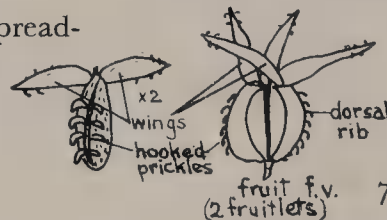


6 **HOMALOSCIADIUM** 286

- F. Leaves palmately divided, usually into  
3 irregularly-lobed segments.



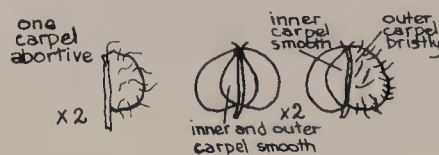
- G. Fruitlets each with two widely-spread-  
ing conspicuous wings at the top.



7 **ULDINIA**

286

- G. Fruitlets without wings at the top.



8 **TRACHYMENE**

286

B. Flowers in compound or irregular umbels.

Page



C. Plants leafless or almost leafless.

4

PLATYSACE

274

C. Plants with numerous leaves.

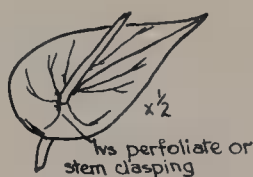
D. Leaves entire.

E. Leaves sessile.

9

BUPLEURUM

289



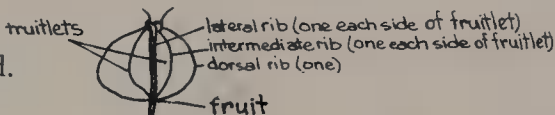
E. Leaves petiolate.

F. Fruitlets 5-ribbed.

4

PLATYSACE

274

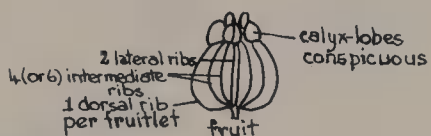


F. Fruitlets 7-9-ribbed.

5

XANTHOSIA

280



(X. candida)

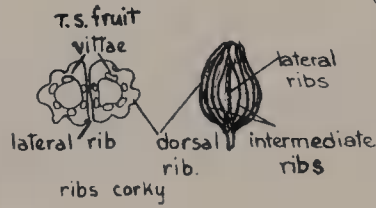
282

D. Leaves, more or less deeply divided.

E. Fruit without prickles.

(alternate E p. 265)

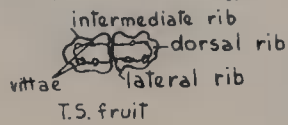
F. Fruit with vittae (oil ducts, between main ridges); fruitlets 5-ribbed; involu-  
cral bracts if present, very small.



G. Petals broad with inflexed tip; fruit  
ovoid or rounded.



H. Flowers minute, white; fruit laterally  
compressed.



10

APIUM,  
CICLOSPERMUM

290

H. Flowers yellow; fruit only slightly compressed laterally; leaf segments thread-like. Plants erect, often tufted, aromatic.



\*11 **FOENICULUM**

Page

291

G. Petals deeply and unequally 2-lobed; fruit elongated.



\*12 **AMMI**

292

F. Fruit without vittae; fruit compressed laterally; fruitlets 5-9-ribbed; involucre bracts present, sometimes quite conspicuous.



G. Fruitlets 5-ribbed; involucre bracts present but small.

H. Calyx-lobes lacking; petals with incurved point; leaves compound, pinnatifid or pinnatisect, fern-like.



292

H. Calyx-lobes present; leaves tripartite.

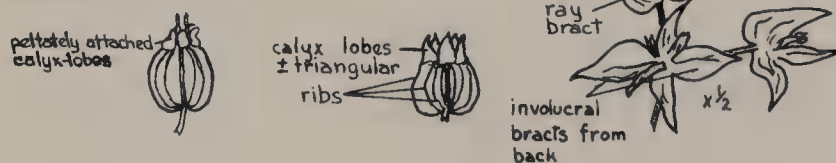


4 **PLATYSACE**  
(*P. tenuissima*)

274

278

G. Fruitlets 7-9-ribbed, involucre bracts present and usually conspicuous; calyx-lobes broad, peltately attached, or cordate to triangular and not peltately attached.



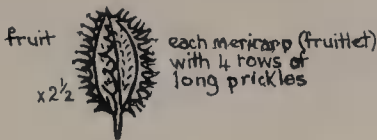
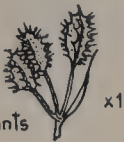
5 **XANTHOSIA**,  
**PENTAPELTIS**

280



E. Fruit prickly.

lvs doubly pinnatisect,  
sepals short,  
petals with inflexed points



14 DAUCUS

Page

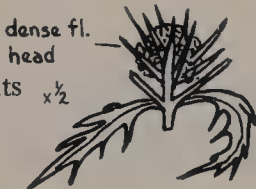
292

A. Flowers in dense or loose heads or solitary.

B. Flowers in dense or loose heads.

C. Flowers in dense heads or in almost sessile compound umbels giving the appearance of heads.

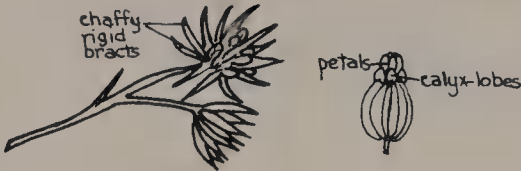
D. Leaf lobes and involucre spiny; plants somewhat resembling thistles.



15 ERYNGIUM

293

D. Leaves and involucre without spines.

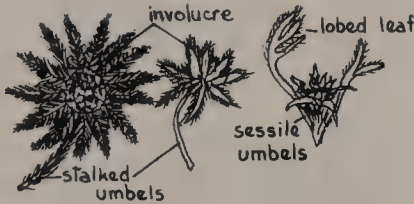


16 SCHOENOLAENA

294

C. Flowers in loose heads.

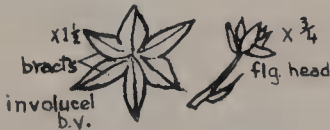
D. Head of numerous simple umbels surrounded by a radiating involucre which may be herbaceous or softly tomentose to woolly, white or coloured.



17 ACTINOTUS

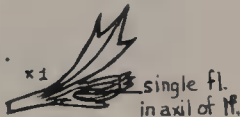
294

D. Heads consisting of a few flowers (in involucl) surrounded by 6 rigid conspicuous involuclal bracts.



18 CHLAENOSCIADIUM 296

B. Flowers solitary (not in heads or umbels).



5 XANTHOSIA,  
(X. singuliflora)

280

## KEY TO SPECIES

1 *Hydrocotyle*†  
(PENNYWORTS)Page

A. Perennial plants,  $\pm$  erect or creeping, usually rooting at the lower nodes.

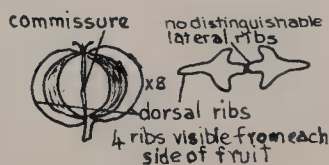
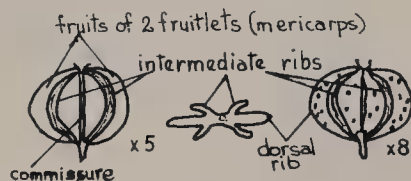
Section 1 267

A. Annual plants, small, filiform or diffuse, not rooting at the nodes (except *H. scutellifera*, where this occasionally occurs).

B. Fruits glabrous.

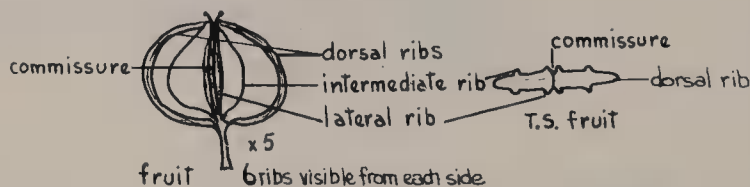
C. Fruits broader than long, formed of two similar parts (fruitlets) attached to each other by a small portion of their surface.

D. Two clearly defined intermediate and two dorsal ribs are visible from each side of the fruit; laterals ribs are lacking or are not distinct from the narrow commissure (faces on which carpels are joined).



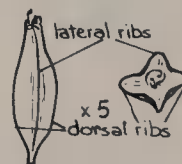
Section 2 268

D. Two clearly defined lateral ribs (quite distinct from the commissure) together with 2 intermediate and 2 dorsal ribs, are visible from each side of the fruit.



Section 3 272

C. Fruits longer than broad, acutely tetragonal (lateral and dorsal ribs prominent).



Section 4 273

†Note. The earlier collections (including those of Blackall) at the W. Aust. Herbarium, together with the additional collections since 1965, have been checked recently by Dr Hj. Eichler, who is monographing this genus. Advantage has been taken of this. New species must, however, await the publication of his monograph.

- B. Fruits ciliate or fringed; the two similar parts (fruitlets) attached by a small portion of their surface.



Page

Section 5 273

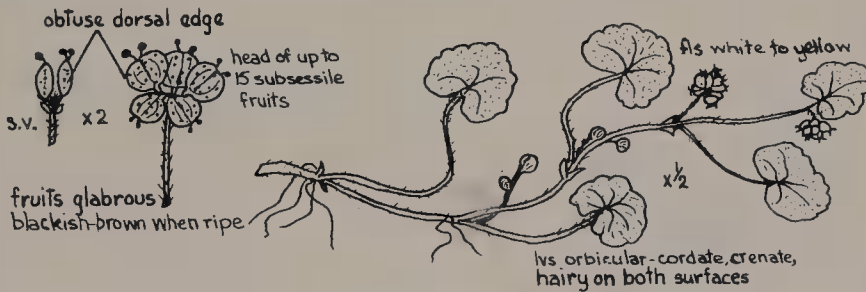
### Section 1

- A. Fruits convex on sides; dorsal edge obtuse; leaves hairy.

Habit: Perennial with creeping stems rooting at the nodes.

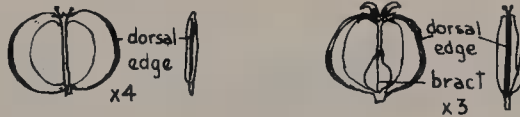
Distribn: Da (Perth area), St (Porongurup Ra.).

Flg: Nov-Dec



1 ***H. hirta***  
Hairy Pennywort

- A. Fruits flat; dorsal edge of carpel acute.



- B. Fruits numerous in simple umbels; peduncles filiform with a small globular head of numerous minute  $\pm$  sessile flowers; plant glabrous.

Habit: Perennial plant, glabrous, with succulent stems,  $\pm$  erect, up to 35 cm high.

Distribn: St (C) (Albany).

Flg: Not recorded

Note. No clear evidence of rooting at the nodes (cf. Benthams *Fl. Aust.* 3, p. 338) could be detected in the R. Brown isotype and Drummond (2nd coll.) specimens of *H. plebeya* at the Brit. Mus. and Kew. In non-type Drummond specimens there was, however, a suspicion of rooting (pers. comm. B. Maslin, Kew, 1978). See also note under *H. scutellifera*, p. 269.



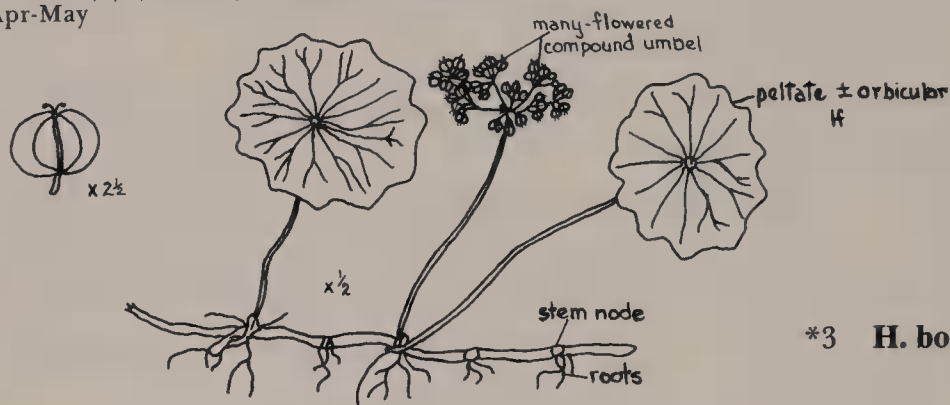
2 ***H. plebeya***

- B. Fruits numerous in compound umbels; peduncles stout; plant glabrous.

Habit: Creeping plant, rooting at the nodes.

Distribn: Da (C) (Bunbury), Wa (C) (Busselton).

Flg: Apr-May



\*3 *H. bonariensis*

## Section 2

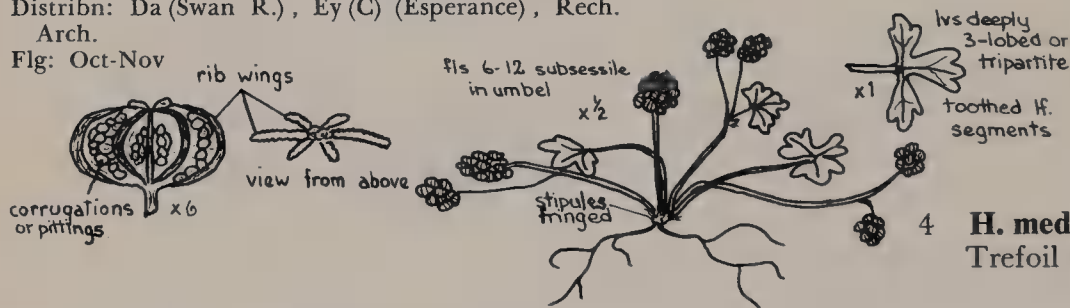
- A. Fruits with the intermediate and dorsal ribs very prominent, forming six thick obtuse wings to the fruit (as seen from above).

Habit: Slender ± glabrous annual 1-7 cm high.

Distribn: Da (Swan R.), Ey (C) (Esperance), Rech.

Arch.

Flg: Oct-Nov



4 *H. medicaginoides*  
Trefoil Pennywort

- A. Fruits with the intermediate ribs semi-circular enclosing an ear-like pit or disc.

- B. Fruit with dorsal ribs winged.

- C. Row of tubercles present on each side of intermediate ribs.

Habit: Small glabrous annual, 2-4 cm high.

Distribn: Da, St (L. Grace).

Flg: Aug-Sept



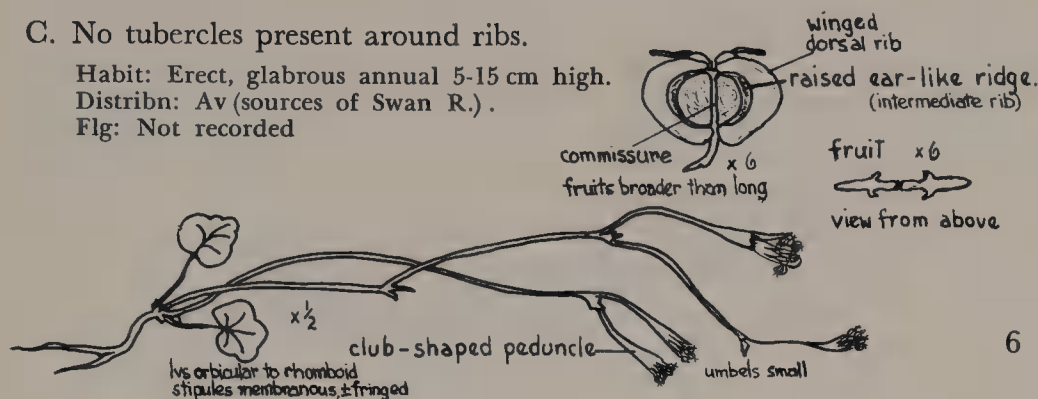
5 *H. muriculata*

## C. No tubercles present around ribs.

Habit: Erect, glabrous annual 5-15 cm high.

Distribn: Av (sources of Swan R.).

Flg: Not recorded

6 *H. corynophora*B. Fruit with dorsal ribs  $\pm$  thickened but not winged.

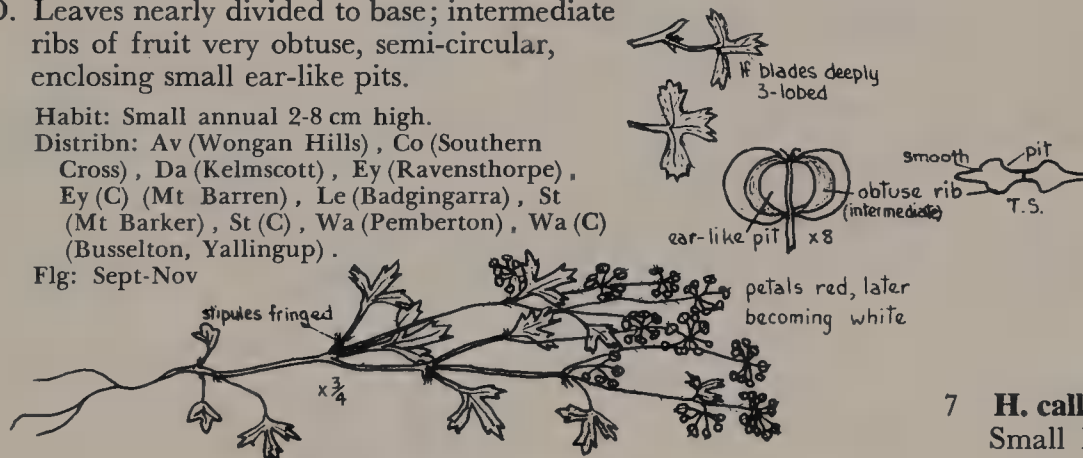
## C. Fruits smooth, sometimes very slightly granular outside the intermediate ribs.

## D. Leaves nearly divided to base; intermediate ribs of fruit very obtuse, semi-circular, enclosing small ear-like pits.

Habit: Small annual 2-8 cm high.

Distribn: Av (Wongan Hills), Co (Southern Cross), Da (Kelmscott), Ey (Ravensthorpe), Ey (C) (Mt Barren), Le (Badgingarra), St (Mt Barker), St (C), Wa (Pemberton), Wa (C) (Busselton, Yallingup).

Flg: Sept-Nov

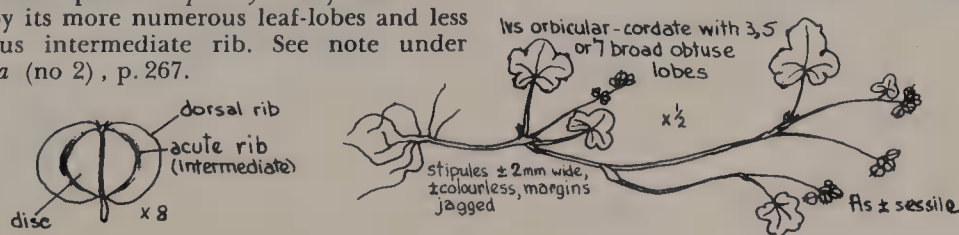
7 *H. callicarpa*  
Small Pennywort

## D. Leaves not divided to middle; intermediate semi-circular ribs of fruit acute, enclosing a broad disc or shield.

Habit: Glabrous annual 5-10 cm high.

Distribn: Da (Pinjarra), St (Porongurup Ra.), St (C) (Albany), Wa (C) (Walpole).

Flg: Sept-Nov

Note. Rooting at the nodes sometimes occurs. The perennial plant *H. plebeya* may be distinguished by its more numerous leaf-lobes and less conspicuous intermediate rib. See note under *H. plebeya* (no 2), p. 267.8 *H. scutellifera*

C. Fruits granular, tuberculate or transversely rugose inside and outside, or outside only, of the intermediate ribs.

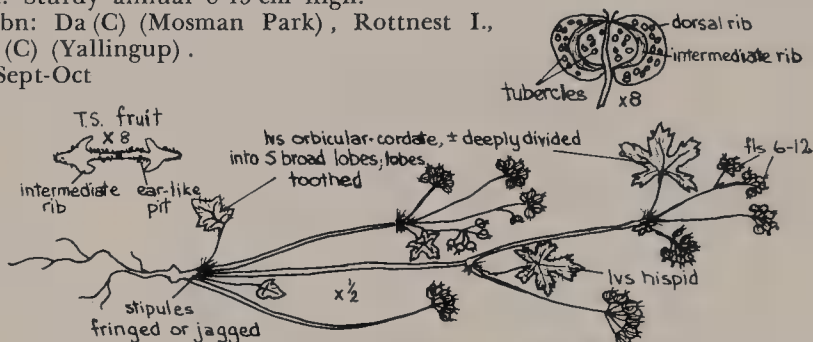
D. Fruits granular or tuberculate inside and outside of the intermediate ribs.

E. Fruits with tubercles in 2 or more rows or irregularly spaced; stems robust.

Habit: Sturdy annual 8-15 cm high.

Distribn: Da (C) (Mosman Park), Rottnest I.,  
Wa (C) (Yallingup).

Flg: Sept-Oct



9 ***H. hispidula***

Plant slender and diffuse; leaves less deeply lobed than species.

Distribn: St (C) (Albany), Wa (Northcliffe).

Flg: Dec

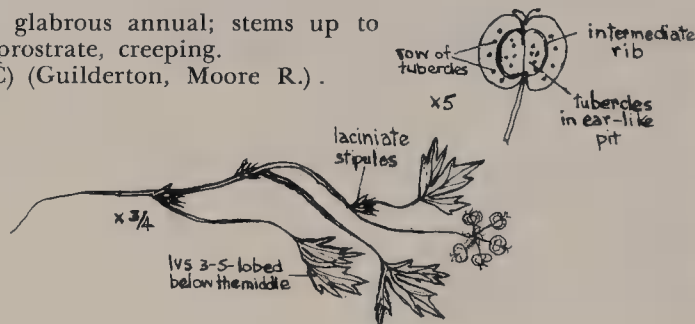
9a ***H. hispidula***  
**var. *tenella***

E. Fruits with a single row of tubercles outside the intermediate rib and a few inside it in the enclosed pit; stems filiform.

Habit: Slender glabrous annual; stems up to 30 cm long, prostrate, creeping.

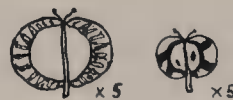
Distribn: Da (C) (Guilderton, Moore R.).

Flg: Oct



10 ***H. trachycarpa***

D. Fruits  $\pm$  transversely rugose, mainly outside the intermediate rib, forming 1 or 2 rows of little pits or fewer relatively larger pits.



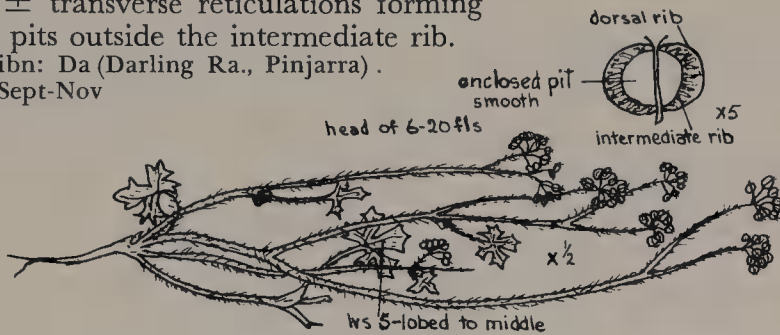
E. Little pits several, arranged in 1 or 2 rows; fruit  $\pm$  2-3 mm broad.



- F. Plant 8-20 cm high, often hairy; numerous,  $\pm$  transverse reticulations forming little pits outside the intermediate rib.

Distribn: Da (Darling Ra., Pinjarra).

Flg: Sept-Nov



11 *H. pilifera*

Plant somewhat smaller, glabrous.

Distribn: Av (Wongan Hills), Co (Merredin), Da (C) (City Beach), Ey (Esperance), St (Stirling Ra. area).

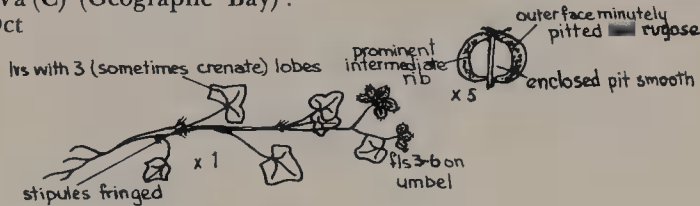
11a *H. pilifera*  
var. *glabrata*

- F. Plant tiny, 3-5 cm high, glabrous; fruit minutely pitted and rugose outside the intermediate rib.

Note. This plant is considerably smaller than *H. pilifera* var. *glabrata*; the leaves also are less divided.

Distribn: Wa (C) (Geographe Bay).

Flg: Sept-Oct



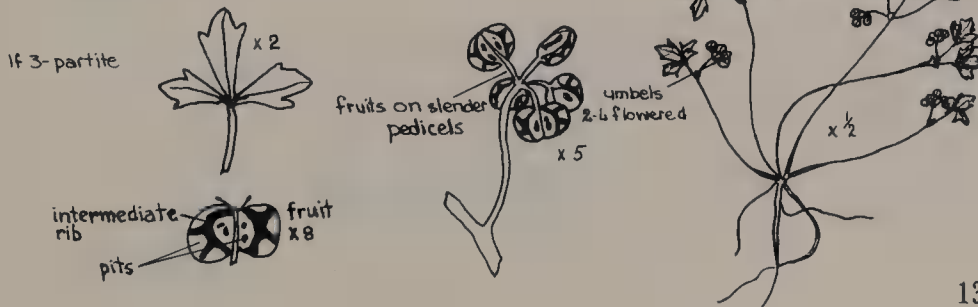
12 *H. capillaris*  
Thread Pennywort

- E. Pits few, 1 (rarely 2) within the intermediate rib and 3-4 outside it; fruit  $\pm$  1 mm broad.

Habit: Small glabrous annual, 5-10 cm high.

Distribn: Av (Tutanning Res.), Da (Swan R.), Ey (C) (Fitzgerald R. Nat. Pk), Ir (C) (Murchison R.), St (L. Grace).

Flg: Sept



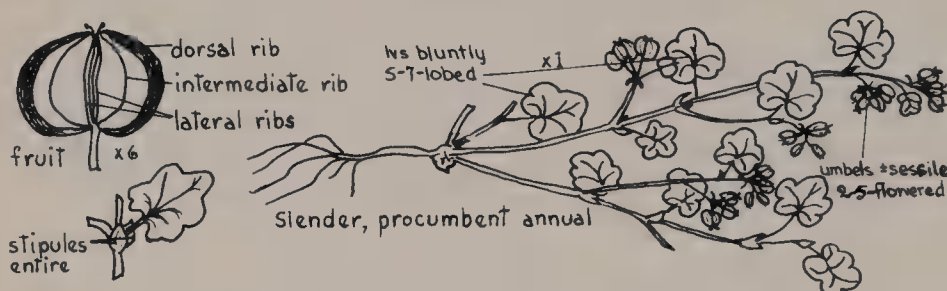
13 *H. rugulosa*

## Section 3

- A. Fruit bodies broader than long; dorsal rib very thick and prominent when ripe; fruits flat and smooth.

Habit: A slender, procumbent annual, 5-10 cm high.  
 Distribn: Av (Tammin), Da-Da (C) (Cannington, Pinjarra), Ey (Ravensthorpe), Ey (C) (Esperance), St (Stirling Ra.), Wa (Blackwood R.), Wa (C) (Vasse R., Cape Leeuwin).

Flg: Sept-Oct



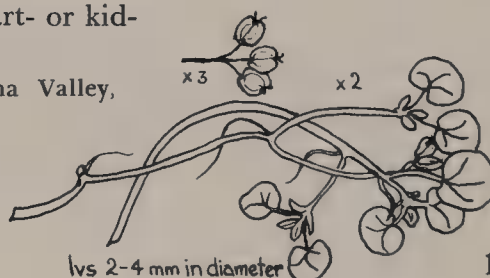
14 *H. diantha*

- A. Fruit bodies not broader than long; ribs somewhat faint.

- B. Floating plant (resembling *Lemna*); leafy part small,  $\pm$  1 cm long; leaves flat, heart- or kidney-shaped.

Distribn: Da-Da (C) (Cannington, Helena Valley, in swamps).

Flg: Oct-Nov

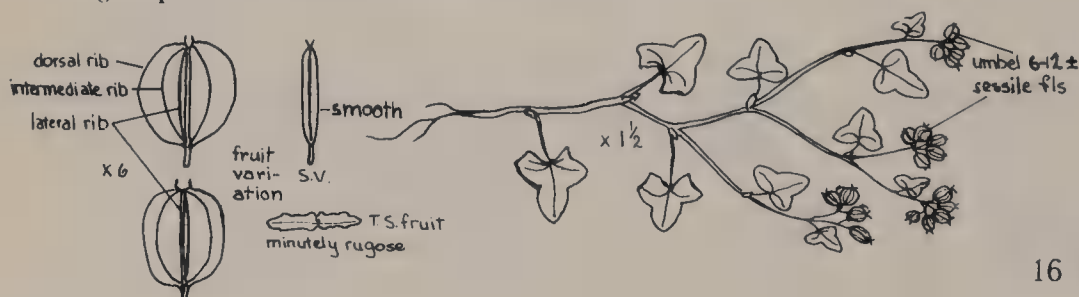


15 *H. lemnoides*

- B. Erect plant, 2.5-5 cm high, with slender widely spreading branches; leaves triangular-hastate.

Distribn: Da (C) (Cannington), Ey, Ey (C) (Esperance), Rech. Arch., St (Stirling Ra.), St (C), Wa-Wa (C) (Manjimup, Walpole).

Flg: Sept-Oct



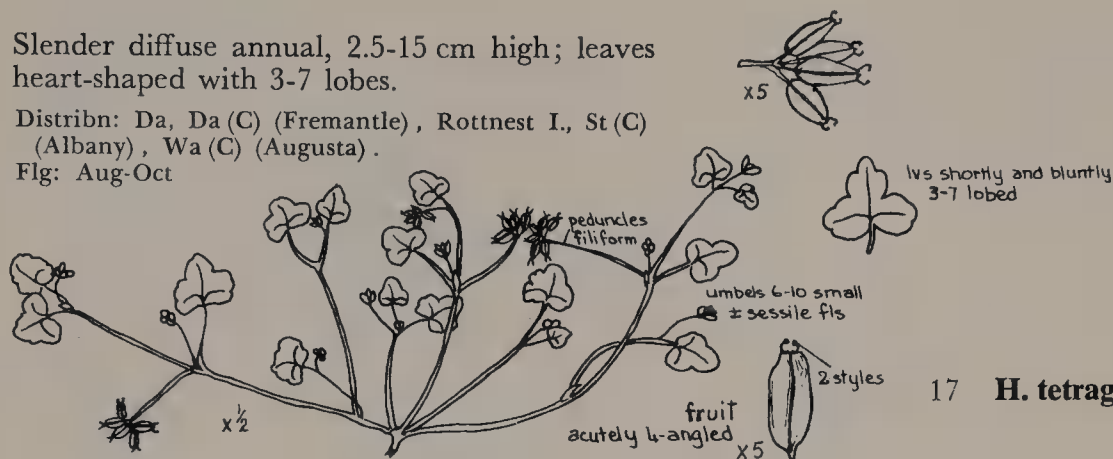
16 *H. alata*

**Section 4**

Slender diffuse annual, 2.5-15 cm high; leaves heart-shaped with 3-7 lobes.

Distribn: Da, Da (C) (Fremantle), Rottnest I., St (C) (Albany), Wa (C) (Augusta).

Flg: Aug-Oct

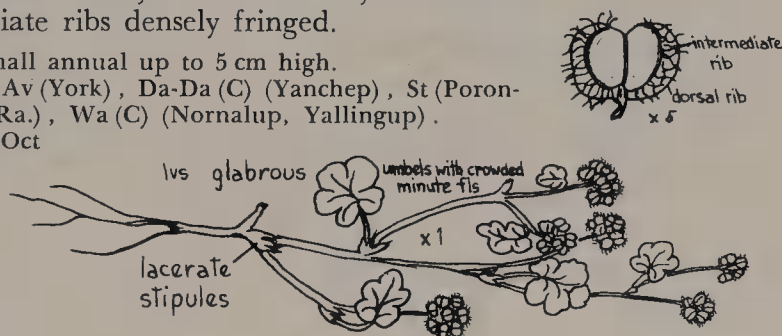
17 ***H. tetragonocarpa*****Section 5**

Leaves reniform or cordate, deeply divided to the middle or less, into 3-5 lobes; fruit with intermediate ribs densely fringed.

Habit: Small annual up to 5 cm high.

Distribn: Av (York), Da-Da (C) (Yanchep), St (Porongurup Ra.), Wa (C) (Nornalup, Yallingup).

Flg: Sept-Oct

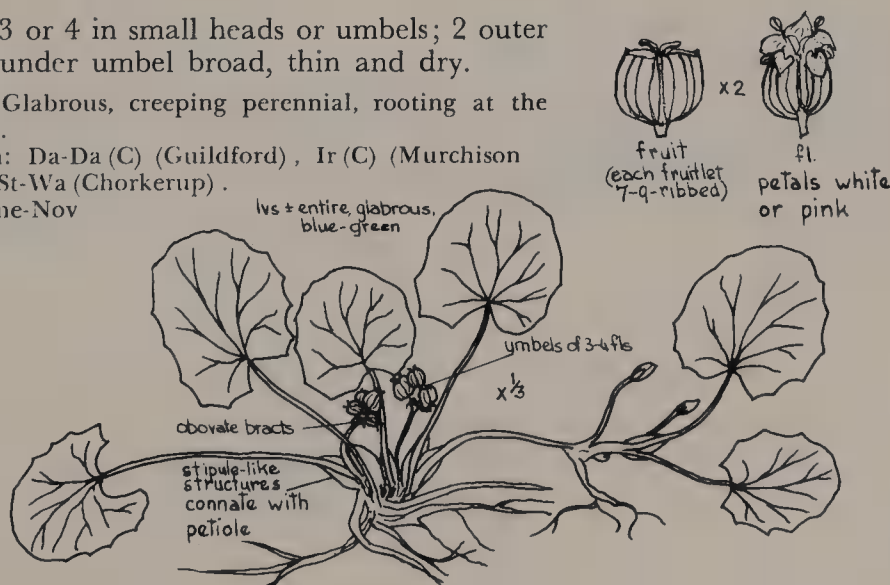
18 ***H. blepharocarpa*****2 *Centella***

Fruits 3 or 4 in small heads or umbels; 2 outer bracts under umbel broad, thin and dry.

Habit: Glabrous, creeping perennial, rooting at the nodes.

Distribn: Da-Da (C) (Guildford), Ir (C) (Murchison R.), St-Wa (Chorkerup).

Flg: June-Nov

***C. cordifolia***  
*Centella*

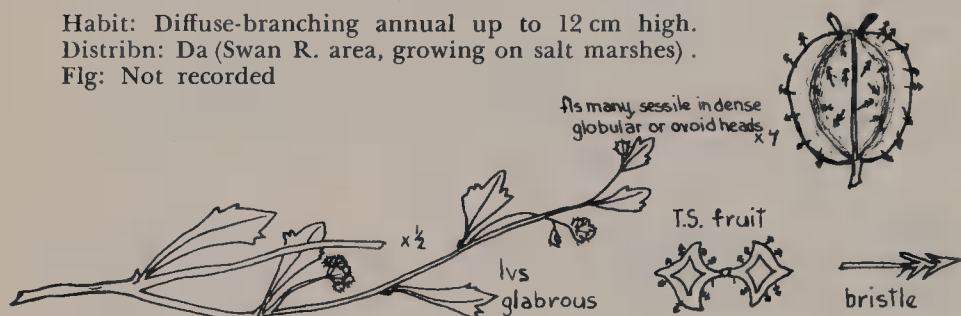
### 3 *Neosciadium*

Leaves obovate or cuneate with 2-3 coarse teeth or lobes; fruit stiffly hairy with barbed bristles.

Habit: Diffuse-branching annual up to 12 cm high.

Distribn: Da (Swan R. area, growing on salt marshes).

Flg: Not recorded



***N. glochidiatum***

### 4 *Platysace*

(See Norman 1939)

- A. Stems leafless or with a few leaves; if leaves are present the upper ones are entire (linear-lanceolate or linear-subulate), while the basal ones are divided.

(alternate A p. 278)

- B. Umbels simple; stems terete or angular; rush-like plant.

Habit: Plants with perennial rootstock; stems rush-like.

Distribn: Ey (C) (Cape Le Grand).

Flg: Oct-Nov



**1 *P. haplosciadia***

- B. Umbels compound.

- C. Stems flattened, with two broad or narrow wings.

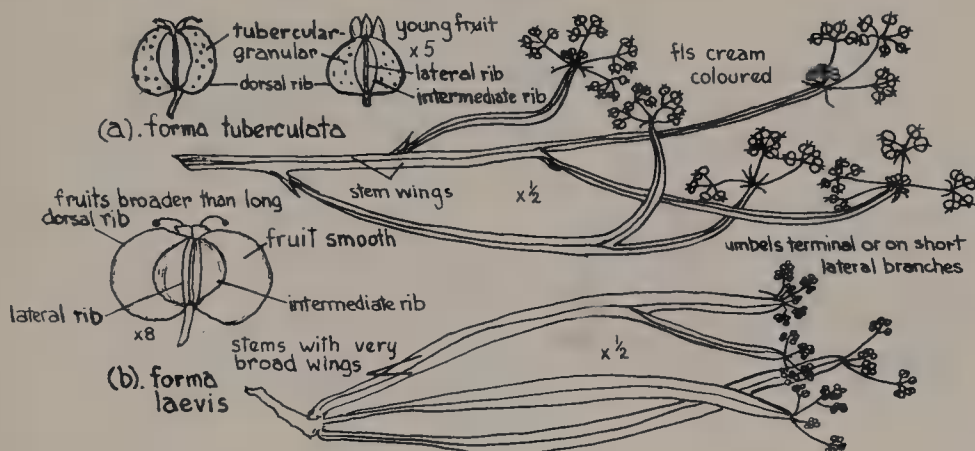
D. Umbels relatively few, terminating conspicuously flattened stems.

Habit: Plants 15-60 cm high, very variable; see note below.

Distribn: Da-Da (C) (Mundaring, Fremantle), Ey (Ravensthorpe), Ey (C) (Esperance), Rech. Arch., St (Porongurup Ra.), St (C), Wa (C).

Flg: Most months of the year

Note. Domin (1908) separated two forms: (a) *tuberculata*, with tubercular-granular fruits, and (b) *laevis*, with non-tubercular smooth to  $\pm$  linear, honey-combed fruits. (*Trachymene platyptera* Bunge is included under forma *laevis*.)



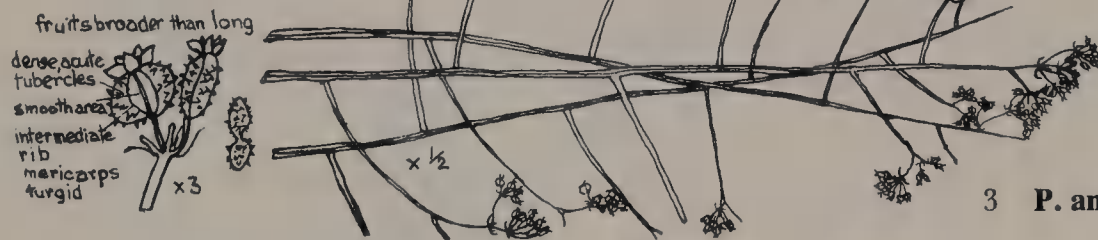
2 ***P. compressa***  
Tapeworm Plant

D. Umbels numerous, often terminating short, slender, lateral, narrow-winged, rather straight branches.

Habit: Herbaceous, many-stemmed glabrous plant. Stem wings narrower and umbels smaller than in *P. compressa*.

Distribn: Da (C) (Swan plain, Lowden), St-St (C) (Mt Barker - Cape Riche).

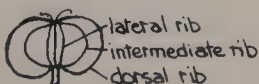
Flg: Apr-Oct



3 ***P. anceps***

C. Stems  $\pm$  flattened or terete or angular.

D. Fruits broader than long.



E. Plants not twining.

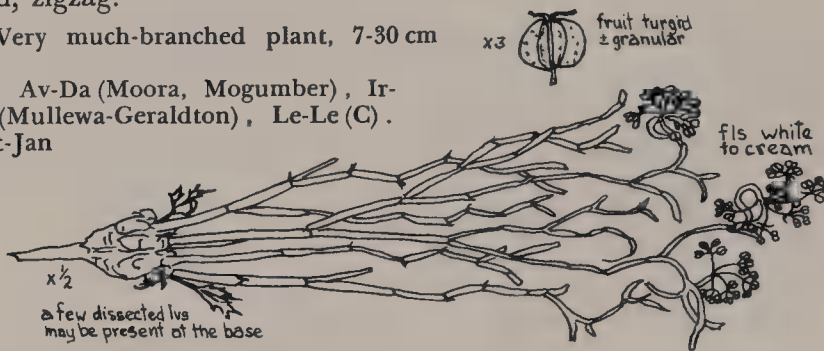


F. Main stems and branches erect, rigid,  $\pm$  flattened, zigzag.

Habit: Very much-branched plant, 7-30 cm high.

Distribn: Av-Da (Moora, Mogumber), Ir-Ir (C) (Mullewa-Geraldton), Le-Le (C).

Flg: Sept-Jan



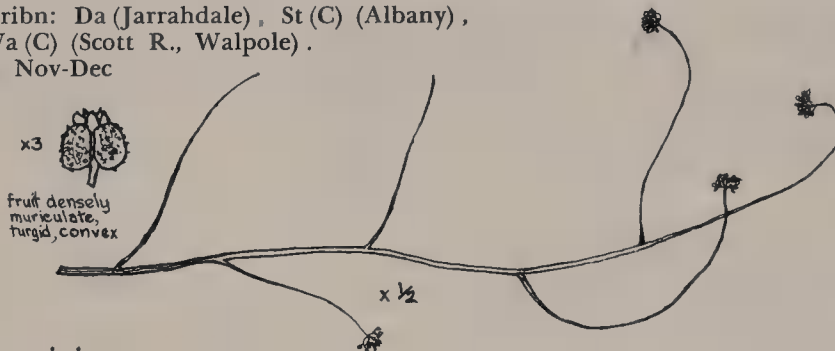
4 ***P. xerophila***

F. Main stems  $\pm$  erect, very slender, scarcely flattened somewhat flaccid- or lax-appearing; lateral branches becoming pendulous.

Habit: Herbaceous glabrous plant, 20-40 cm high, with several slender stems arising from near the base.

Distribn: Da (Jarrahdale), St (C) (Albany), Wa (C) (Scott R., Walpole).

Flg: Nov-Dec



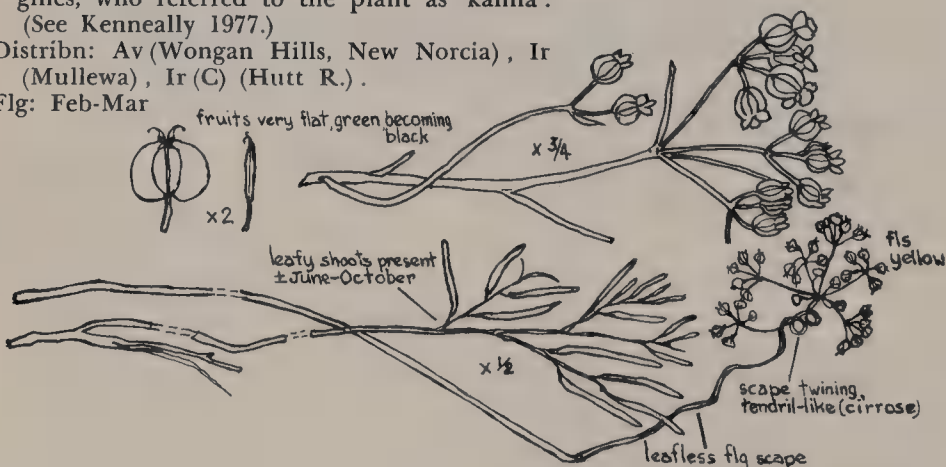
5 ***P. filiformis***

E. Plants twining

Habit: Tuber-bearing climbing plant with a wiry stem, bearing linear-lanceolate leaves in the spring. This dies back and in late summer a leafless flowering scape develops. Tubers provided a source of food for the Aborigines, who referred to the plant as 'kanna'. (See Kenneally 1977.)

Distribn: Av (Wongan Hills, New Norcia), Ir (Mullewa), Ir (C) (Hutt R.).

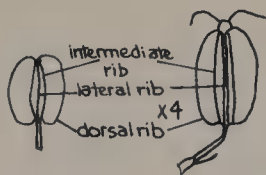
Flg: Feb-Mar



6 ***P. cirrosa***  
Kanna or Native  
Potato



D. Fruits as long as, or longer than broad.



E. Plants almost leafless.

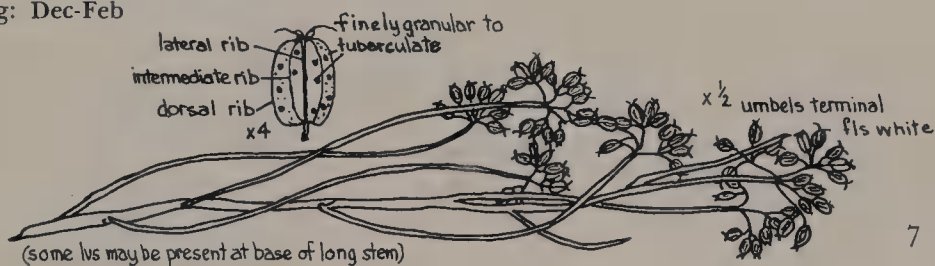
F. Stems erect, not flexuose, angular not flattened.

G. Stems long, erect; plants rush-like.

Habit: Glabrous perennial plant 30-60 cm high.

Distribn: Av (Wongan Hills), Da (Bakers Hill), Ir (C) (Howatharra), Le (Wathe-roo), St-St (C) (Katanning - Albany).

Flg: Dec-Feb



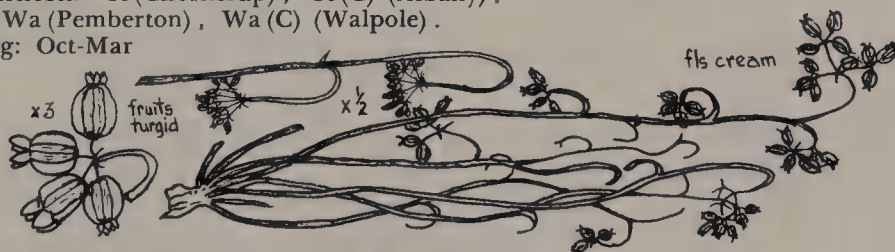
7 *P. juncea*

G. Stems short, slender, very narrowly winged; ends of flowering branches markedly reflexed.

Habit: Slender, much-branched perennial herb up to 15 cm high.

Distribn: St (Chorkerup), St (C) (Albany), Wa (Pemberton), Wa (C) (Walpole).

Flg: Oct-Mar



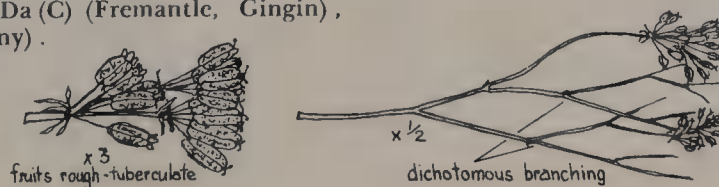
8 *P. pendula*

F. Stems flexuose,  $\pm$  dichotomously branched towards the top.

Habit: Many-stemmed herbaceous, glabrous plant up to 30 cm high.

Distribn: Da-Da (C) (Fremantle, Gingin), St (C) (Albany).

Flg: Nov-Dec



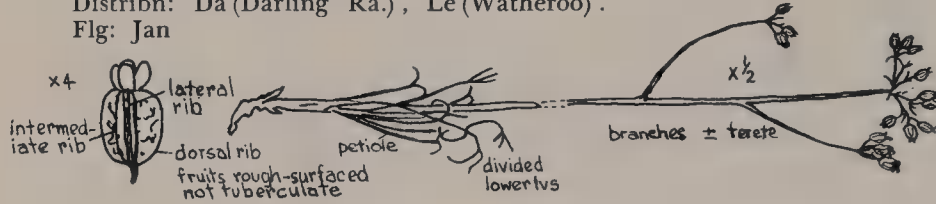
9 *P. ramosissima*

E. Plants with a few leaves commonly present, lower ones with petioles and much divided, upper ones rudimentary.

Habit: Herbaceous glabrous plant with  $\pm$  terete stems branching near the top.

Distribn: Da (Darling Ra.), Le (Watheroo).

Flg: Jan



10 ***P. teres***

A. Stems leafy.

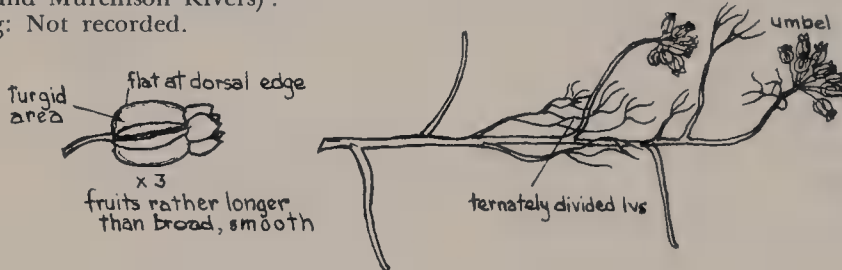
B. Leaves divided.

C. Stems erect, with sturdy widely-spreading (divaricate) branches.

Habit: Plant up to 30 cm high.

Distribn: Da (C) -Le (C) -Ir (C) (between Moore and Murchison Rivers).

Flg: Not recorded.



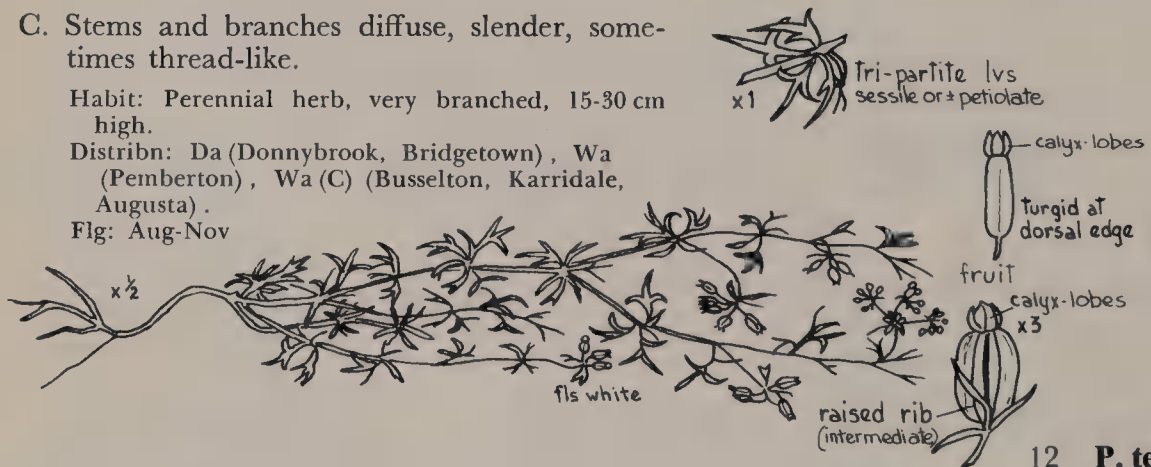
11 ***P. dissecta***

C. Stems and branches diffuse, slender, sometimes thread-like.

Habit: Perennial herb, very branched, 15-30 cm high.

Distribn: Da (Donnybrook, Bridgetown), Wa (Pemberton), Wa (C) (Busselton, Karridale, Augusta).

Flg: Aug-Nov



12 ***P. tenuissima***

B. Leaves entire.

C. Leaves under 1.5 cm long.

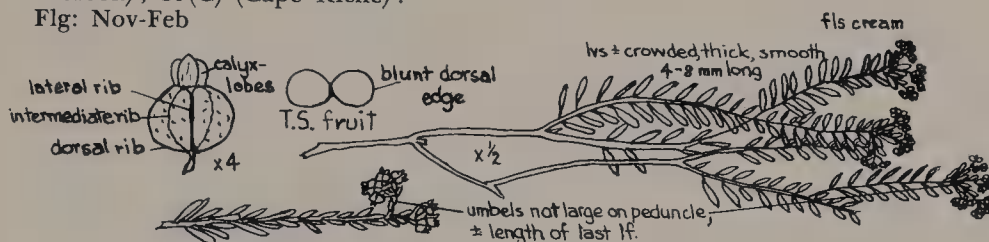
D. Leaves erect and spreading; heath-like plants.

E. Umbels  $\pm$  sessile; carpels swollen towards the blunt dorsal edge.

Habit: Shrubby heath-like plant 15-30 cm high.

Distribn: Av (Tammin), Ey (C), St (Cranbrook), St (C) (Cape Riche).

Flg: Nov-Feb



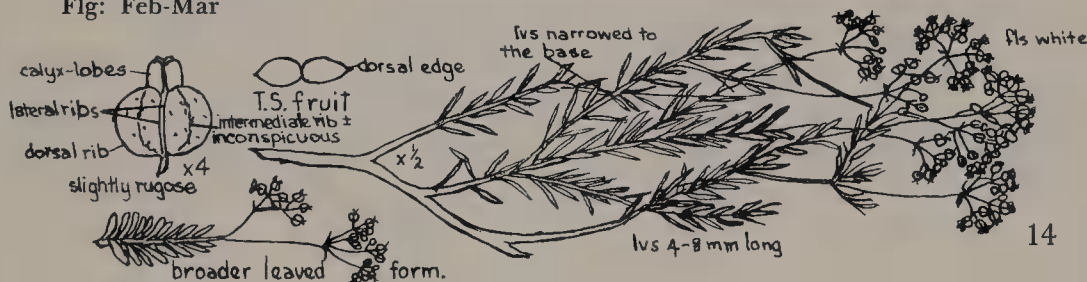
13 *P. commutata*

E. Umbels on slender peduncles longer than the leaves; carpels slightly swollen in the middle, dorsal edge acute.

Habit: Shrubby heath-like plant 15-45 cm high.

Distribn: Av (Tammin), Co (Coolgardie, Hyden), Ey (Jerramungup), Ey (C) (Bremer Bay-Esperance), Ir (E. Yuna), St (C).

Flg: Feb-Mar



14 *P. effusa*

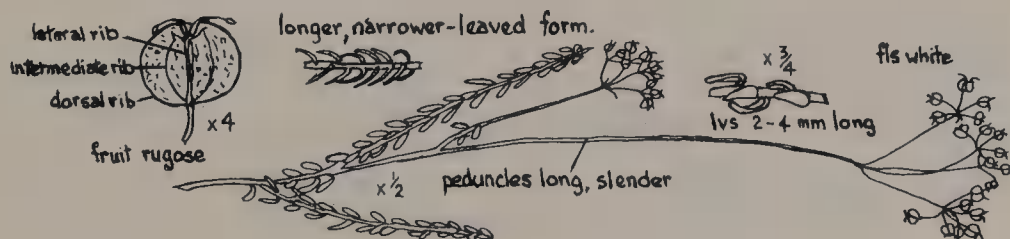
D. Leaves crowded and closely reflexed.

Habit: Low shrub up to 30 cm high; tuber bearing.

Distribn: Av (Bendering), Ey (Kundip), Ey (C) (Bremer Bay-Israelite Bay), St, St (C), Wa.

Flg: Oct-Mar

Note. The egg-shaped tubers (5-7 cm long) provided a source of food for the Aborigines.



15 *P. deflexa*

C. Leaves 1.5-2.5 cm long.

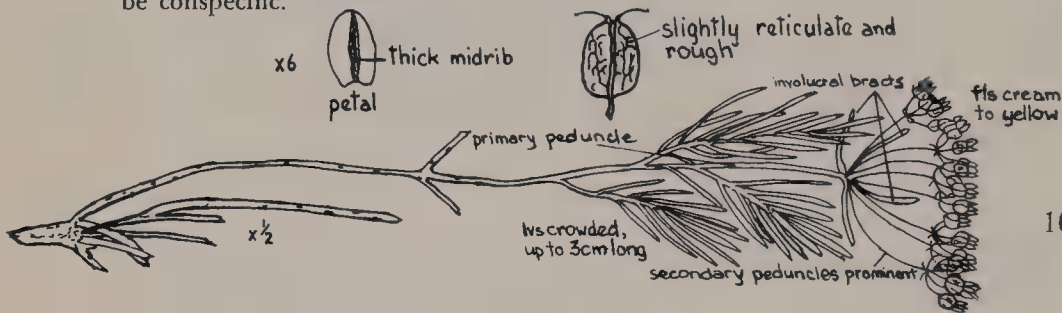
D. Leaves somewhat rigid, narrow-linear; involucre bracts up to 2 cm long, similar to leaves; rhizome not tuber-bearing.

Habit: Rhizomatous shrub up to 1 m high.

Distribn: Av (Wongan Hills), Co (Burracoppin), Ir (E. Yuna), St (Broomehill).

Flg: June-Aug, Jan-Feb

Note. *Siebertia oblonga* S. Le Moore appears to be conspecific.



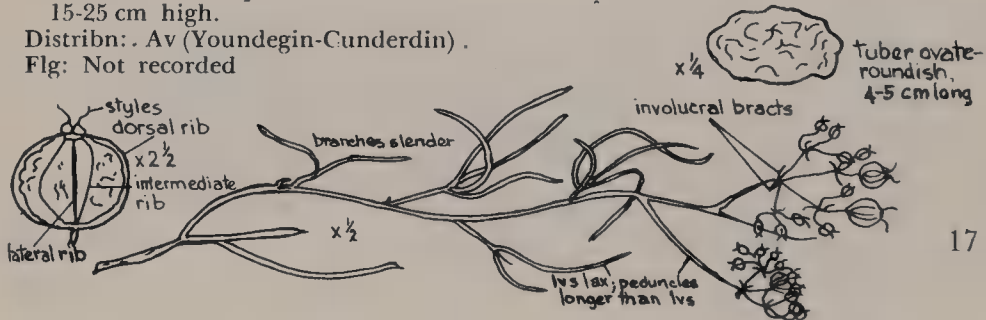
16 *P. maxwellii*

D. Leaves lax, filiform-linear; involucre bracts very short, pointed; rhizome bearing tubers.

Habit: Glabrous plant with slender branches, 15-25 cm high.

Distribn: Av (Youndegin-Cunderdin).

Flg: Not recorded



17 *P. eatoniae*

## 5 *Xanthosia*, *Pentapeltis*

A. Umbels simple or irregularly compound, dense and compact, or with 1 or a few flowers; involucre bracts small, narrow or herbaceous, not petal-like.

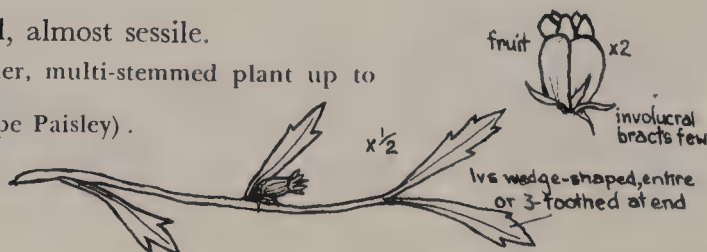
(alternate A p. 284)

B. Umbels 1-flowered, almost sessile.

Habit: Diffuse slender, multi-stemmed plant up to 20 cm high.

Distribn: Ey (C) (Cape Paisley).

Flg: Not recorded



1 *X. singuliflora*

B. Umbels 3-to many-flowered.

C. Leaves orbicular-cordate, semi-orbicular, broad-triangular, or kidney-shaped, coarsely toothed or 5-9-lobed.

D. Calyx-lobes peltately attached by the centre.

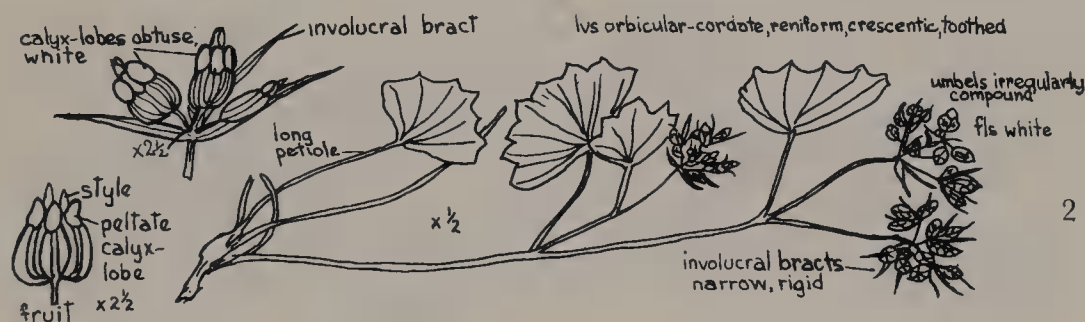
E. Involucral bracts narrow, rigid, conspicuous; calyx-lobes obtuse.

Habit: Prostrate, glabrous, perennial plant 30-60 cm high.

Distribn: Da (Darling Ra., Bridgetown), St (C), Wa (Manjimup), Wa (C) (Margaret R., Denmark).

Flg: Nov-Mar

Note. Returned from *Xanthosia peltigera* Benth. to the original *Pentapeltis peltigera* Bunge by G. Keighery (1979). See also Domin 1921/22.



2 *P. peltigera*

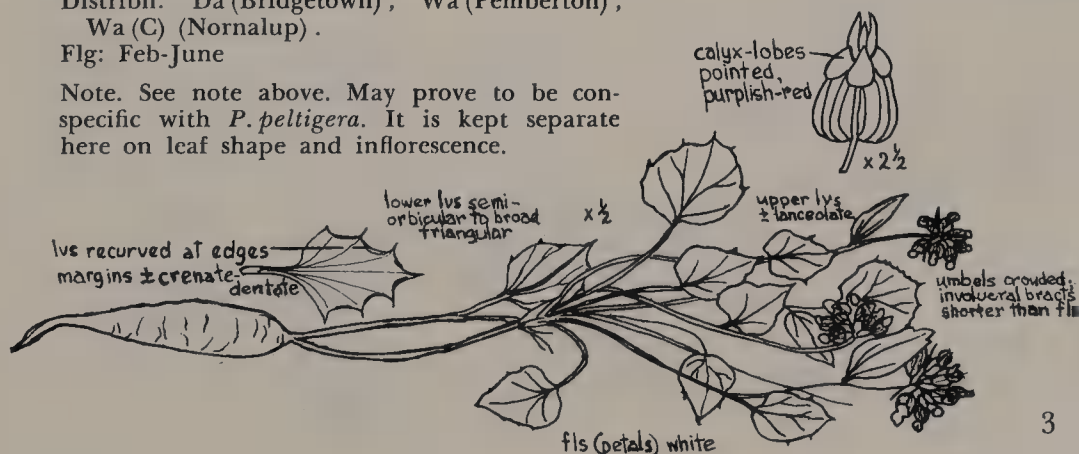
E. Involucral bracts short or small and inconspicuous; calyx-lobes pointed at apex.

Habit: Semi-prostrate herb.

Distribn: Da (Bridgetown), Wa (Pemberton), Wa (C) (Nornalup).

Flg: Feb-June

Note. See note above. May prove to be conspecific with *P. peltigera*. It is kept separate here on leaf shape and inflorescence.



3 *P. silvatica*

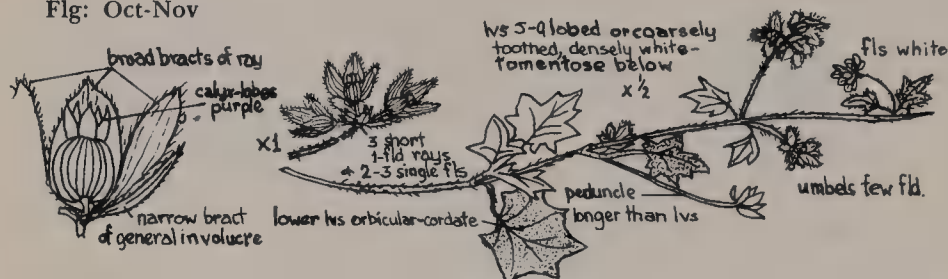


## D. Calyx-lobes not peltately attached.

Habit: Diffuse, straggling, much-branched plant.

Distribn: Ey (C) (Fitzgerald R. Nat. Pk), Wa (Manjimup).

Flg: Oct-Nov

4 ***X. hederifolia***

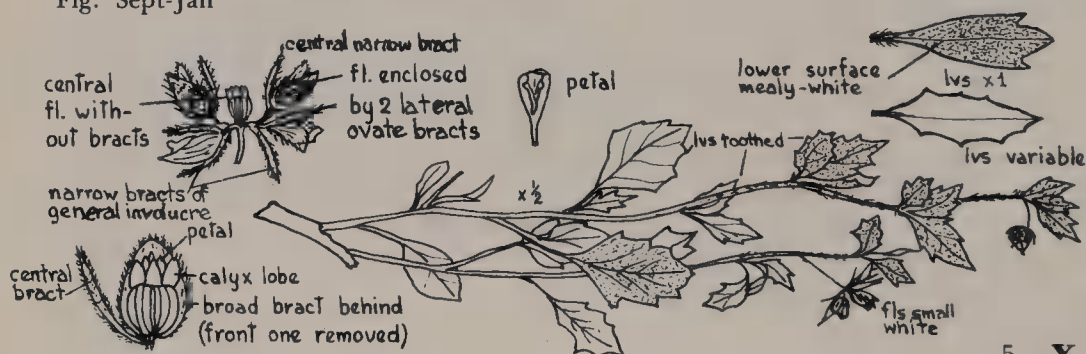
## C. Leaves ovate, obovate, oblong or linear-lanceolate, narrow, entire, or toothed or lobed or 3-partite.

## D. Leaves broadly-ovate or oblong-cuneate, entire or toothed or lobed.

Habit: Prostrate or semi-prostrate slender herb 15-45 cm high.

Distribn: Da (Darling Ra.), St (C), Wa (C) (Vasse R., Karridale, Walpole).

Flg: Sept-Jan

5 ***X. candida***

Leaves much shorter, trilobate, with  $\pm$  diverging side-lobes.

Distribn: Wa (C) (Yallingup).

Flg: Sept

5a ***X. candida***  
var. ***subtrilobata***D. Leaves narrow,  $\pm$  entire or shortly 3-lobed or divided into 3.

## E. Umbels irregularly compound.

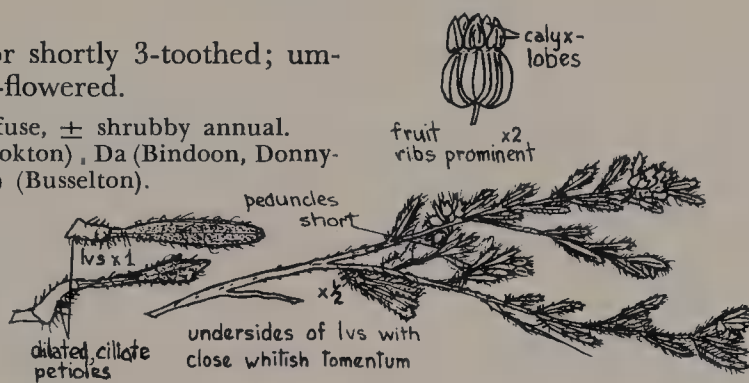


- F. Leaves entire or shortly 3-toothed; umbels small, 3-9-flowered.

Habit: Small diffuse,  $\pm$  shrubby annual.

Distribn: Av (Brookton), Da (Bindoon, Donnybrook), Wa (C) (Busselton).

Flg: Oct-Jan



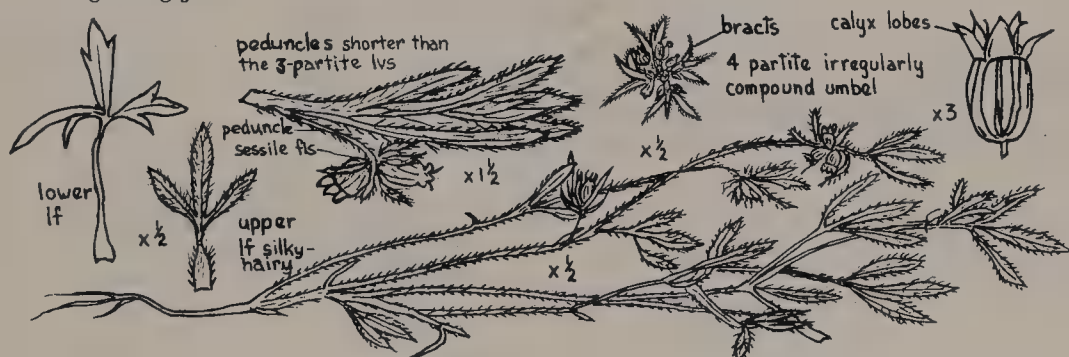
6 *X. ciliata*

- F. Leaves 3-partite, with entire or 2-lobed segments; secondary umbels with 3-6 sessile flowers and 1-2 stalked ones in the centre.

Habit: Hairy shrub 20-30 cm high.

Distribn: Da (Kings Park, Darling Ra.), Ey (Ravensthorpe), Ey (C) (Bremer Bay-Esperance), Le (Eneabba), Wa (C) (Busselton, Walpole).

Flg: Aug-Jan



7 *X. huegelii*

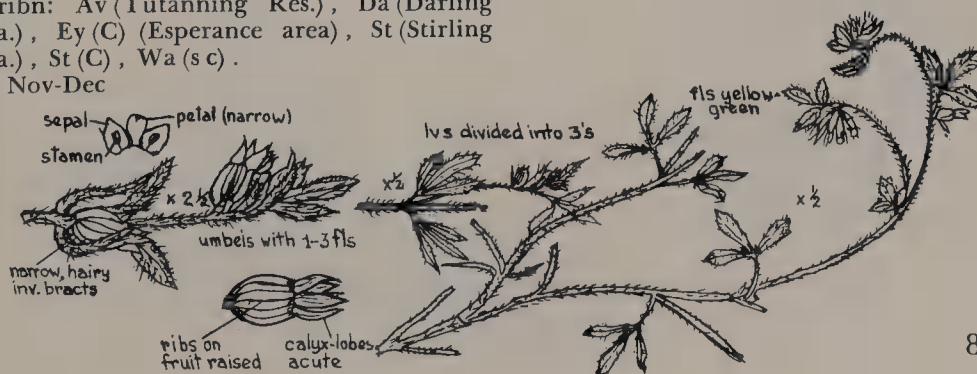
- E. Umbels  $\pm$  simple, few- to several-flowered.

- F. Umbels  $\pm$  sessile, 1-3-flowered.

Habit: Densely-branched, hairy plant 5-12 cm high.

Distribn: Av (Tutanning Res.), Da (Darling Ra.), Ey (C) (Esperance area), St (Stirling Ra.), St (C), Wa (s c).

Flg: Nov-Dec



8 *X. pusilla*

Stems slender, elongated, glabrous or nearly so.

8a *X. pusilla*  
var. *glabrata*

Note. Ostenfeld (1921) reported collecting *X. tasmanica* Domin near Bridgetown. While commenting on the unexpectedness of finding this Tasmanian species in W. Aust. he stated that his plants agreed exactly with all the specimens in the Kew

herbarium, on which Domin founded the new species. He considered that the differences from *X. pusilla* listed by Domin (e.g. the much broader and glabrescent leaflets and the shape and size of the fruit) were adequate. Not sighted.

F. Umbels on slender peduncles longer than the leaves; many-flowered.

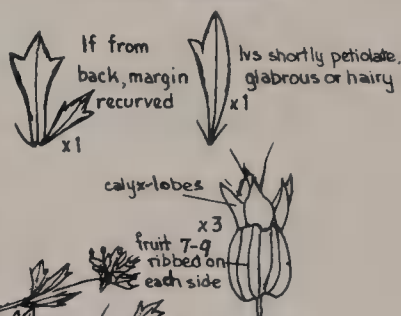
Habit: Diffuse shrub up to 60 cm high.

Distribn: Av (Moorabool), Da (Serpentine), Ir (Mullewa).

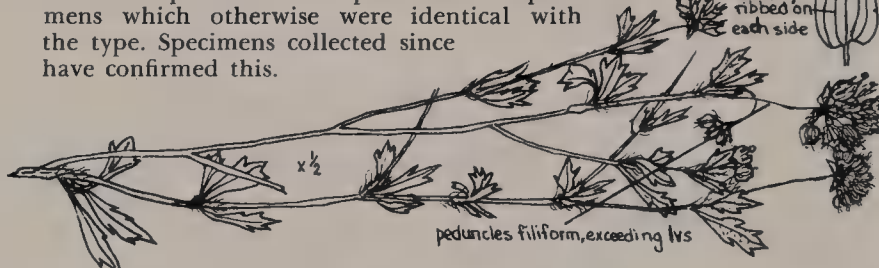
Flg: Aug-Sept

Note. In Bentham's original description of this species he stated that each umbel contained 2-4 flowers. W. V. Fitzgerald (1900 annotated specimen) indicated that there could be up to 30 flowers per umbel in specimens which otherwise were identical with the type. Specimens collected since have confirmed this.

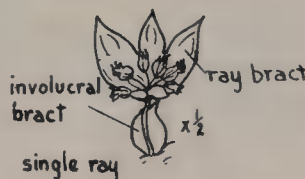
lvs divided into 3 wedge-shaped segments, usually again 2-3-lobed  
fls white or light yellow



9 *X. fruticulosa*



A. Umbels clearly compound with 3-4(5) well-developed rays, each with several flowers; involucre bracts conspicuous, often petal-like.



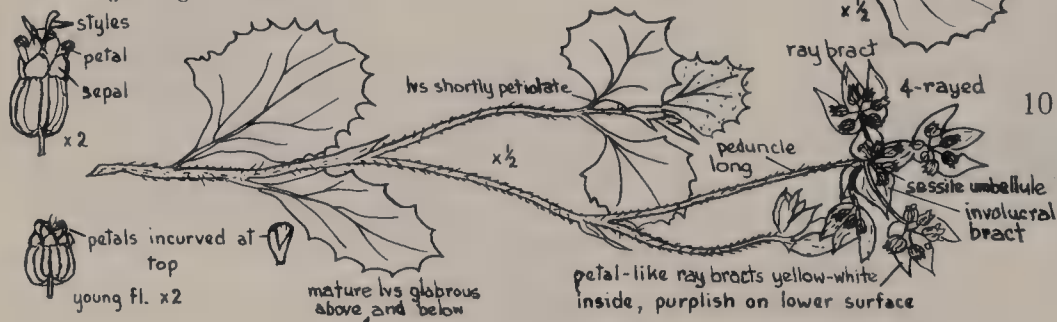
B. Flowering-branches leafy.

C. Leaves  $\pm$  circular to ovate, serrate or toothed, 3-6 cm long.

Habit: Erect perennial herb 30-60 cm high.

Distribn: Da (Wooroloo), St (Stirling Ra., Porongurup Ra.), St (C) (Albany area), Wa (Manjimup), Wa (C) (Walpole, Denmark).

Flg: Aug-Dec



10 *X. rotundifolia*  
Southern Cross

Leaves suborbicular or broadly-rhomboidal, thick, leathery; even mature leaves remain densely white tomentose below.

Distribn: St (Stirling Ra.).

Flg: Oct-Dec

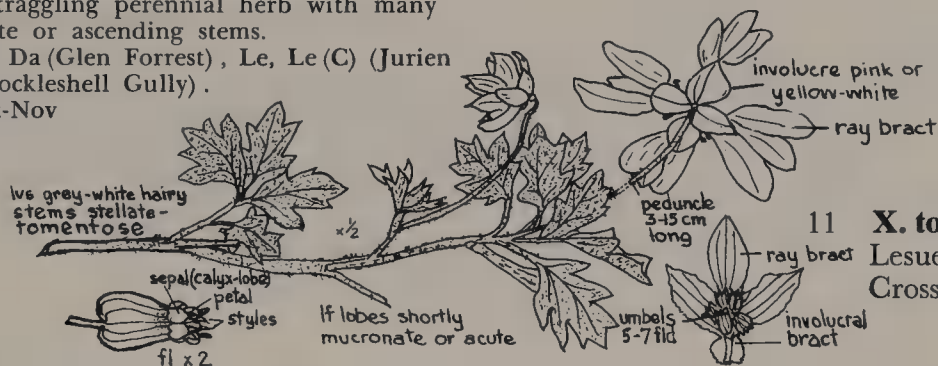
10a ***X. rotundifolia***  
var. ***hypoleuca***

C. Leaves 3-10-lobed, 1-3 cm long.

Habit: Straggling perennial herb with many prostrate or ascending stems.

Distribn: Da (Glen Forrest), Le, Le (C) (Jurien Bay, Cockleshell Gully).

Flg: Sept-Nov



11 ***X. tomentosa***  
Lesueur Southern Cross

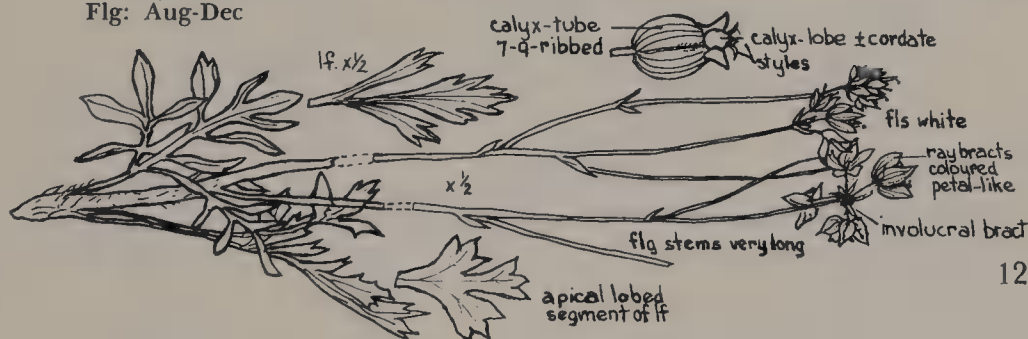
B. Flowering branches leafless; leaves mainly at base of stems.

C. Leaves divided into 3 with wedge-shaped, toothed or lobed segments.

Habit: Slender, erect, rhizomatous herb up to 1 m high.

Distribn: Av (York), Da (Mundaring, Collie), Ey (C) (Pallinup R.), St, St (C) (Bald I.), Wa (Manjimup, Nannup), Wa (C) (Augusta, Karri-dale).

Flg: Aug-Dec



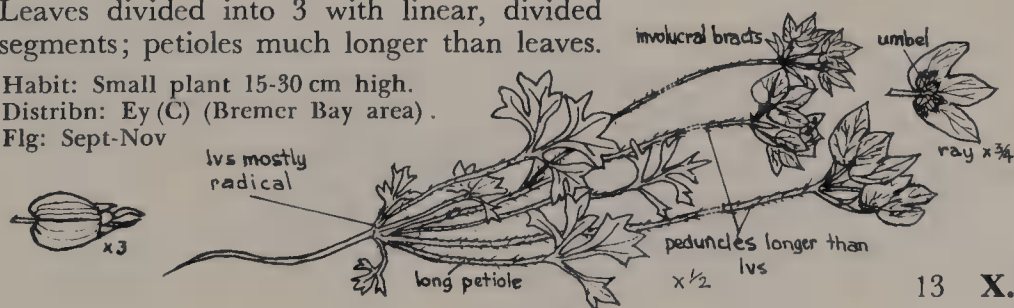
12 ***X. atkinsoniana***

C. Leaves divided into 3 with linear, divided segments; petioles much longer than leaves.

Habit: Small plant 15-30 cm high.

Distribn: Ey (C) (Bremer Bay area).

Flg: Sept-Nov



13 ***X. peduncularis***

## 6 *Homalosciadium*

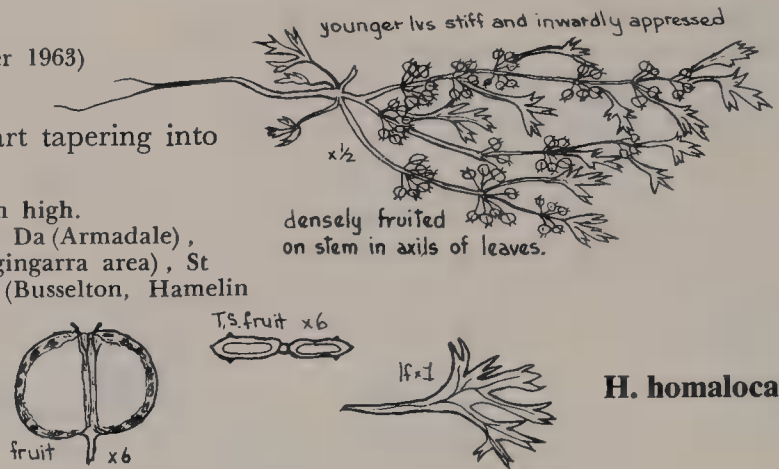
(See Eichler 1963)

Leaf wedge-shaped, basal part tapering into petiole.

Habit: Glabrous annual, 5-10 cm high.

Distribn: Av (Tutanning Res.), Da (Armadale), Da (C) (Kings Park), Le (Badgingarra area), St (Mt Barker), St (C), Wa (C) (Busselton, Hamelin Bay, Augusta).

Flg: Sept-Nov



***H. homolocarpum***

## 7 *Uldinia*

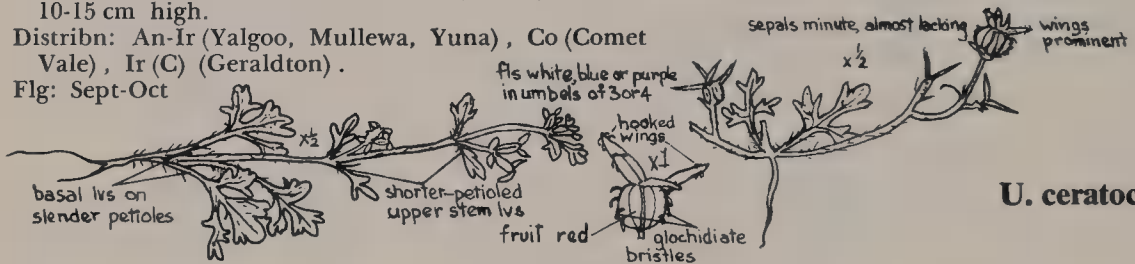
(See Burbidge 1954)

Leaves mostly at base; palmate segments irregularly lobed.

Habit: Prostrate, glabrous to sparsely hairy annual 10-15 cm high.

Distribn: An-Ir (Yalgoo, Mullewa, Yuna), Co (Comet Vale), Ir (C) (Geraldton).

Flg: Sept-Oct



***U. ceratocarpa***

## 8 *Trachymene*

A. Small annual plants; umbels with 3-12 flowers.

(alternate A p. 288)

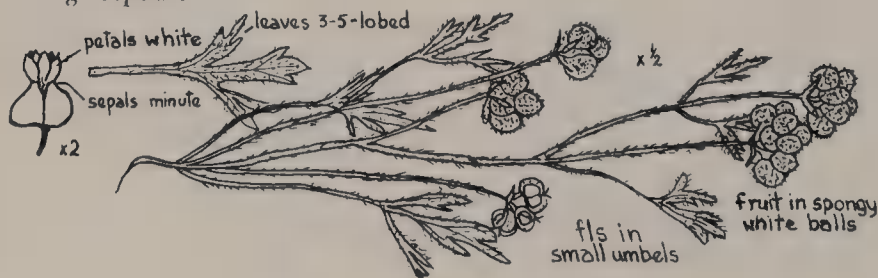
B. Fruits woolly or bristly.

C. Fruits covered with dense white cottony wool.

Habit: Erect herb up to 15 cm high, with deeply-lobed leaves.

Distribn: An (Cue), Av (Wongan Hills, Tutanning Res.), Co (Merredin), Da (Perth area), Ey (Oldfield R.), Ir (Northampton), Le (Badgingarra), St (C).

Flg: Sept-Dec



**1 *T. ornata***  
Spongefruit



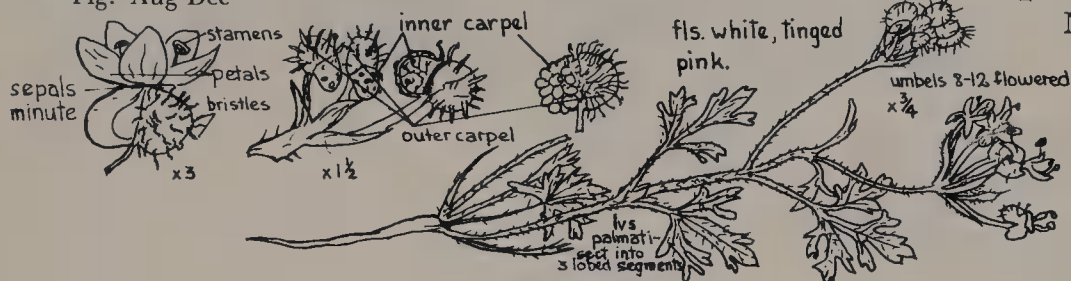
## C. Fruits with bristles.

## D. Outer carpel with short sharp points and bristles; inner carpels smooth or slightly warted.

Habit: Erect  $\pm$  hairy annual, 3-12 cm high.

Distribn: A common species occurring in all South-west and Eremaean botanical districts.

Flg: Aug-Dec

2 ***T. pilosa***  
Native Parsnip

Radical leaves larger, densely tufted, exceeding the short stems; involucre bracts rather larger.

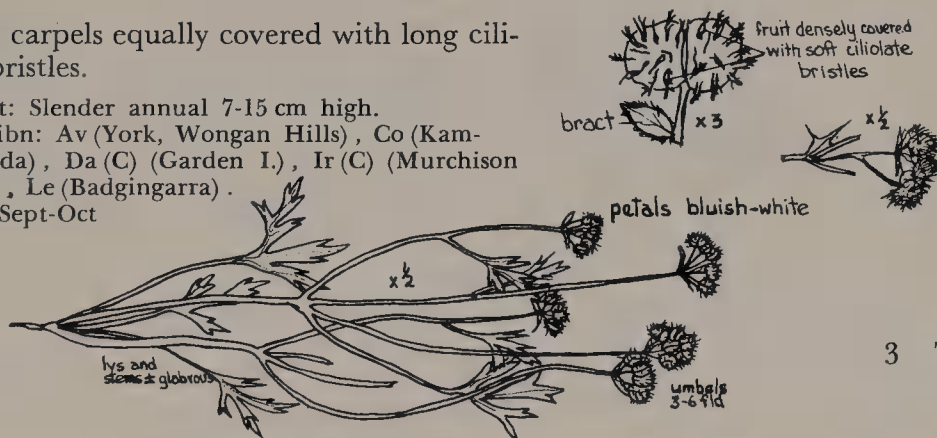
2a ***T. pilosa***  
var. ***preissiana***

## D. Both carpels equally covered with long ciliate bristles.

Habit: Slender annual 7-15 cm high.

Distribn: Av (York, Wongan Hills), Co (Kambalda), Da (C) (Garden I.), Ir (C) (Murchison R.), Le (Badgingarra).

Flg: Sept-Oct

3 ***T. cyanopetala***

Fruits with very long soft hairs.

Distribn: Av (Wongan Hills), Da (C) (Swan R.). long soft hairs

Flg: Sept

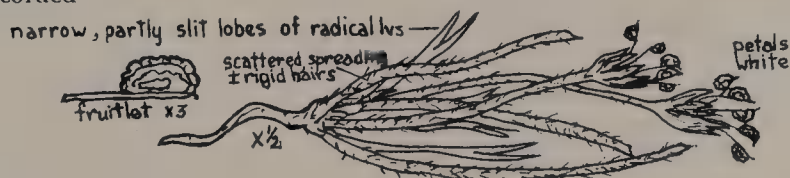
3a ***T. cyanopetala***  
var. ***ciliatula***B. Fruits  $\pm$  glabrous.

## C. One fruitlet only developed, very wrinkled.

Habit: Erect dwarf annual, 10-20 cm high.

Distribn: Co (Coolgardie).

Flg: Not recorded

4 ***T. croniniana***

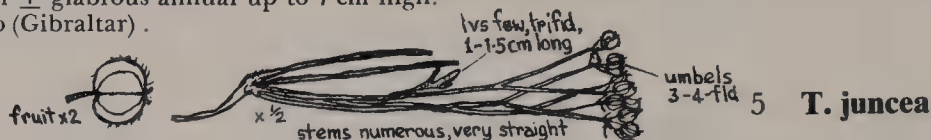
## C. Both fruitlets developed.

- D. Fruit medium sized (2 mm long x 3 mm wide), glabrous except for a few hairs on the dorsal margins, scarcely turgid.

Habit: Small  $\pm$  glabrous annual up to 7 cm high.

Distribn: Co (Gibraltar).

Flg: Sept



**T. juncea**

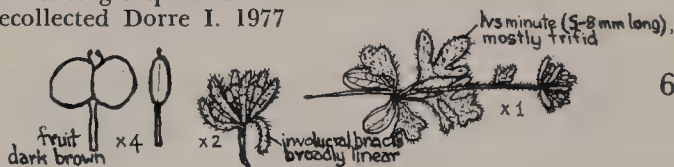
- D. Fruit extremely small (1 mm long x 2 mm wide), glabrous, turgid,  $\pm$  tuberculate.

Habit: Very small annual 1.5-5 cm high, covered with spreading glandular hairs.

Distribn: Ir (C) (Murchison R. - Shark Bay, Dorre I.).

Flg: Aug

Note. Described from a single specimen (Mueller 1892). Recollected Dorre I. 1977 by A. Weston.



**T. elachocarpa**

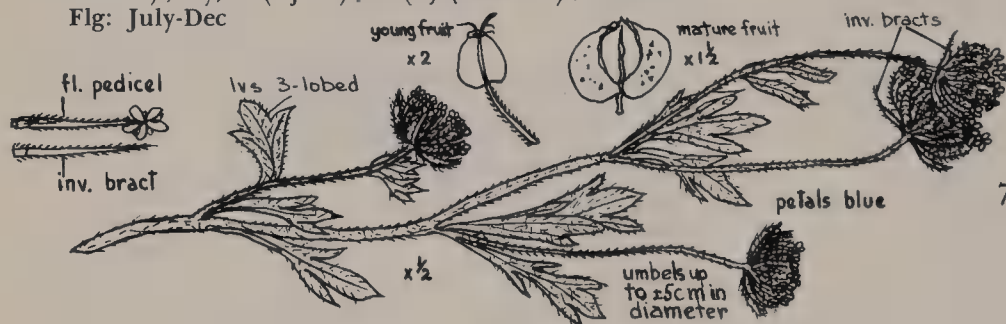
- A. Coarse, erect plants; annuals or biennials; umbels with numerous flowers (50 or more).

- B. Involucral bracts approximately as long as pedicels; flowers large and blue.

Habit: Plant 30-60 cm high.

Distribn: Da (C) (Kings Park), Rottnest I., Co (Bruce Rock), Ey, Ir (Ajana), Ir (C) (Kalbarri).

Flg: July-Dec



**7 T. caerulea**  
Blue Lace Flower  
or Rottnest Island  
Daisy

Flowers white.

Distribn: Ir (C).

Flg: July-Dec

**7a T. caerulea**  
var. *leucopetala*

- B. Involucral bracts much shorter than pedicels; flowers small and white; one carpel often abortive.

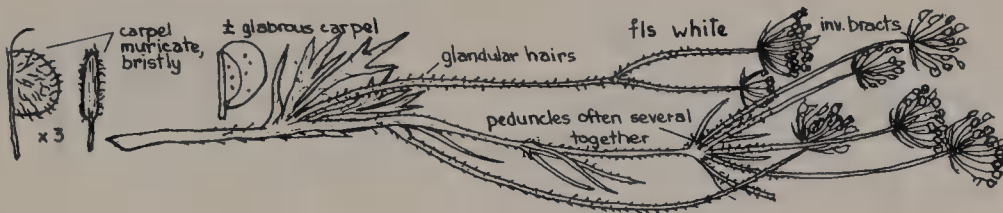


C. Plants hairy, not glaucous; carpel muricate or  $\pm$  glabrous.

Habit: Stout erect plant 30-50 cm high.

Distribn: Av (Mt Stirling), Da (Darlington), Ey (Scaddan area), St (Porongurup Ra.), Wa (Mt Chudalup), Wa (C) (Nornalup).

Flg: Aug-Jan



8 *T. anisocarpa*

C. Plants almost glabrous (some glandular hairs on peduncles), and glaucous when fresh.

Habit: Erect annual plant 30-60 cm high.

Distribn: An (Sandstone), Co (Kumarl), Ey (Ravensthorpe area).

Flg: Aug-Oct



9 *T. glaucifolia*  
Wild Carrot

## 9 *Bupleurum*

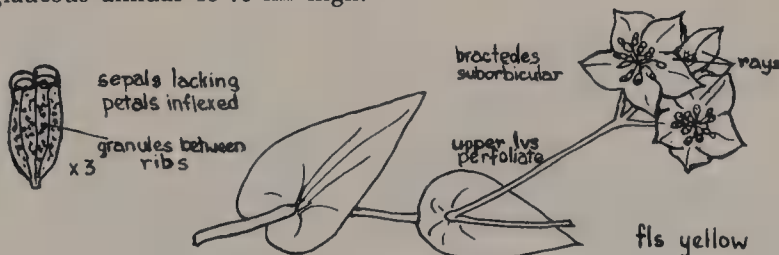
(See Tutin, *Flora Europaea*, 1968)

Leaves ovate or oblong-lanceolate, stem-clasping or perfoliate; umbel-rays 2-3; broad ovate bracteoles are present below partial umbels.

Habit: Erect, glaucous annual 15-75 cm high.

Distribn: Da.

Flg: Nov



\**B. lancifolium*

10 *Apium*, *Ciclospermum*

(See P. Short 1979)

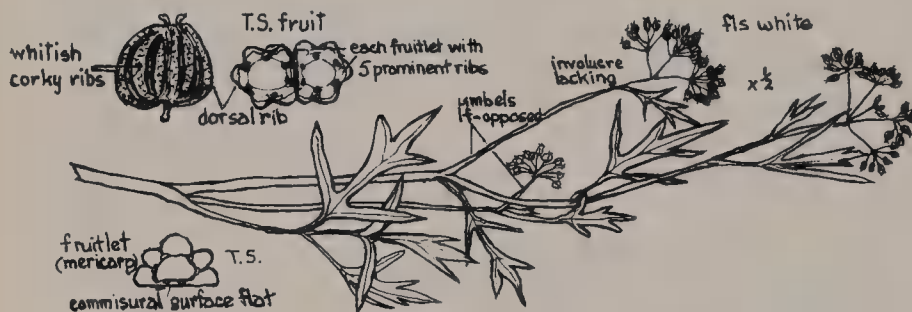
A. Fruit  $\pm$  covered by the thick corky ribs, such that the seed wall can scarcely be seen.

B. Leaves once or twice pinnatisect; leaf lobes 3-5, segments broad or narrow.

Habit: Perennial procumbent or spreading herb, with thin angular stems 30-60 cm long.

Distribn: Da (Perth area, Bridgetown), Da (C) (Yanchep, Bunbury), St (C), Wa (C) (Cape Leeuwin).

Flg: Oct-Jan



1 ***A. prostratum***  
subsp. ***prostratum***  
Sea Celery

Leaves broader.

Distribn: Ey (C) (Dempster Inlet), St (C) (Bald I.), Wa (C) (Denmark, Margaret R.). Coastal dunes and foreshore areas.

Flg: Dec-May

Note. In his key to the infraspecific taxa of *A. prostratum*, Short (1978) lists 4 subspecies. As the only other one apart from *A. prostratum* subsp. *prostratum* which occurs in W. Aust. is very rare (?ssp. *indesc.* see *A. prostratum* ssp. "A", one collection only in the Porongurup Ra. 1867) it is not considered here.



(the name var. *filiforme* refers to the thin stems not the leaf shape).

1a ***A. prostratum***  
subsp. ***prostratum***  
var. ***filiforme***

B. Leaves divided by 3s into numerous thread-like segments.

Habit: Slender glabrous annual 30-60 cm high. Weed.

Distribn: Rech. Arch.

Flg: Nov-Jan



\*2 ***Ciclospermum***  
***leptophyllum***  
Slender Celery

A. Fruit with slender narrow ribs with broad furrows between them, so that the seed wall is apparent.

B. Annual plants with short stems 5-15 cm high.

Distribn: Da (Perth area), Ey (C) (Bremer Bay - Esperance), Ir (C) (Greenough R., Abrolhos), Rech. Arch.

Flg: Sept-Nov



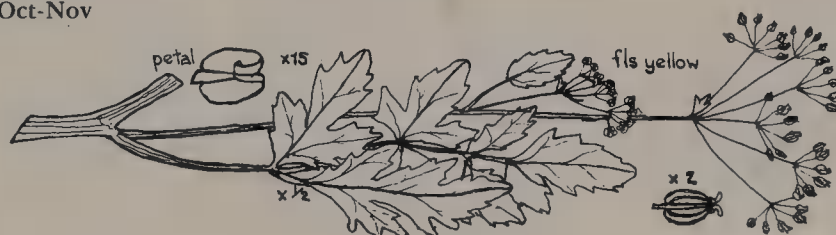
3 **A. annuum**

B. Biennial plants, erect or  $\pm$  prostrate, stems over 30 cm long.

Habit: Robust aromatic biennial 35-50 cm high, with pinnate leaves, the segments being broad and ovate-wedge-shaped.

Distribn: Da (Perth area). Garden escape.

Flg: Oct-Nov



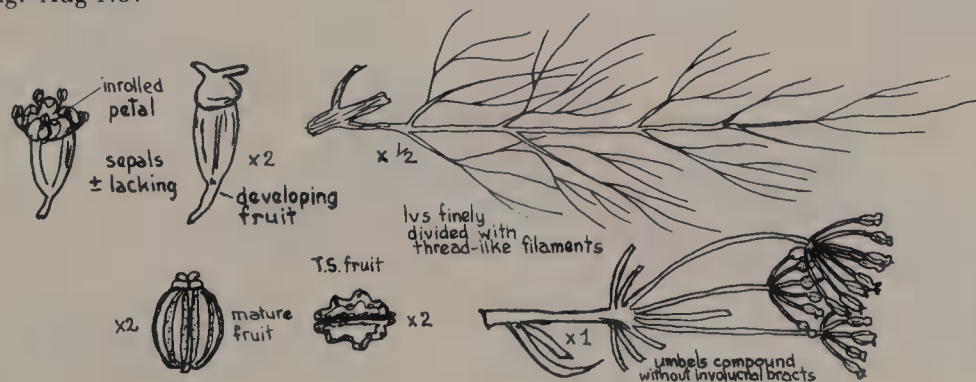
\*4 **A. graveolens**  
Celery

## 11 *Foeniculum*

Erect glabrous perennial up to 2 metres high; aromatic; umbels large; flowers numerous, yellow.

Distribn: Da (C) (Fremantle, Perth area), Wa (C).

Flg: Aug-Nov



\***F. vulgare**  
Fennel

12 *Ammi*

Habit: Glabrous plant, annual or biennial, up to 1.5 m high.

Distribn: Da (Perth), St (L. Grace), Wa (C) (Denmark).



**\**A. majus***  
Bishop's Weed

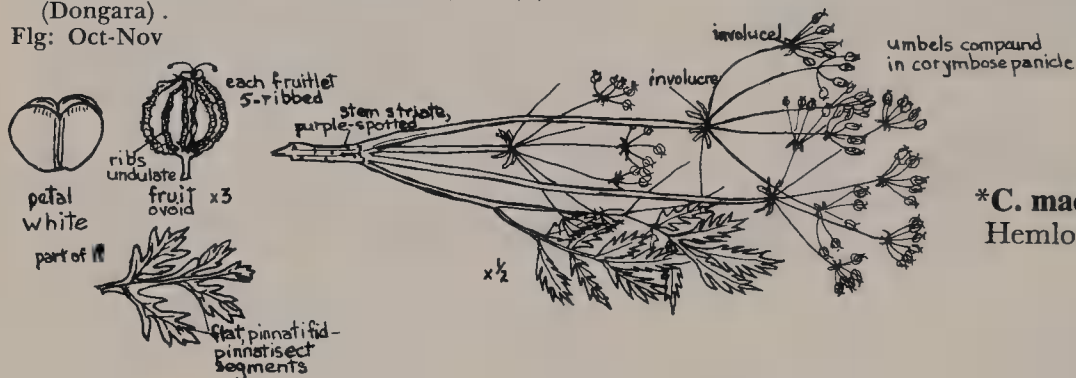
13 *Conium*

Habit: Robust, glabrous biennial up to 1.5 m high.

Poison plant. Noxious weed.

Distribn: Av (Beverley), Da (Pinjarra), Ir (C) (Dongara).

Flg: Oct-Nov



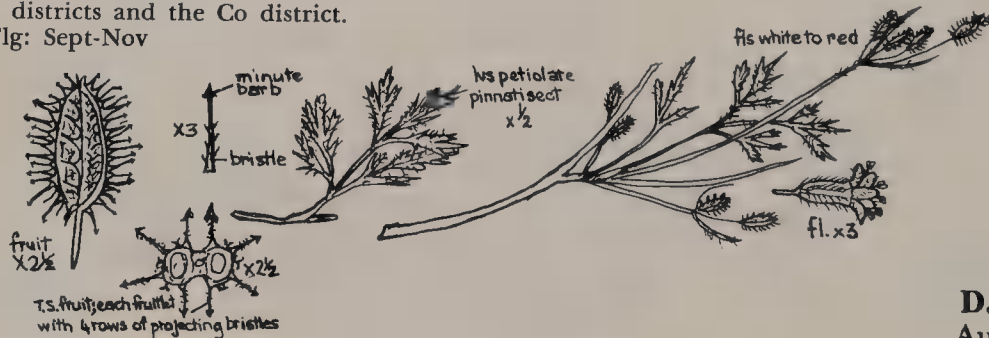
**\**C. maculatum***  
Hemlock

14 *Daucus*

Habit: Slender diffuse annual 15-30 cm high; umbel rays few and erect.

Distribn: Recorded for all the Southwest botanical districts and the Co district.

Flg: Sept-Nov



***D. glochidiatus***  
Australian Carrot

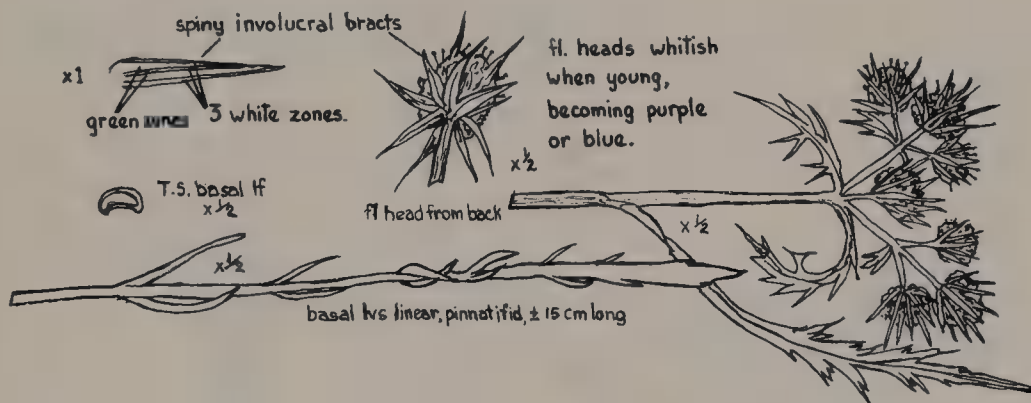
15 *Eryngium*

(See Wolff [1913 (1958)])

- A. Plants erect, 30-60 cm high; leaves pinnatifid; flower-heads  $\pm$  globular; bracts rigid, pungent, purple-coloured.

Distribn: Av (Kellerberrin), Da-Da (C) (Kings Park, Fremantle, Bunbury), Ir (Northampton), Le (Badgingarra), St(C), Wa(C) (Busselton, Cape Leeuwin). Flg: Aug-Jan

Note. This taxon was described under *E. pinnatifidum* by Bunge (1841) from Preiss' W. Aust. material. Bentham (1866) and Wolff [1913 (1958)] considered it to be the same as the Chilean species *E. rostratum* Cav. (1801). These authorities are followed here pending further studies (note C. Norman's reservations in annotations on Perth specimens (1938)).



1 ***E. rostratum***  
Blue Devil

Basal leaves 15-30 cm long, linear, entire, or with a few linear lobes.

Distribn: Da (Tweed R.).

1a ***E. rostratum***  
var. ***subdecumbens***

- A. Plants prostrate; main stems very short; branches stolon-like but not rooting; leaves toothed.

Distribn: Da (Midland Junction), St (Kojonup). Flg: Jan-Mar



2 ***E. vesiculosum***  
Prickfoot



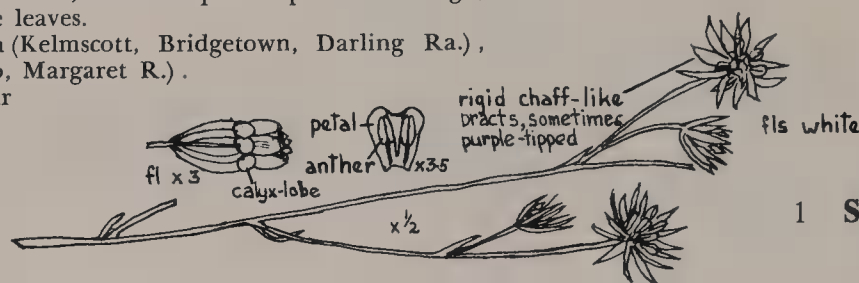
16 *Schoenolaena*

- A. Calyx-lobes circular-peltate; partial umbels 5, each 4-5-flowered; anthers linear-oblong.

Habit: Herbaceous, rush-like plant up to 60 cm high, with terete leaves.

Distribn: Da (Kelmscott, Bridgetown, Darling Ra.), Wa (Nillup, Margaret R.).

Flg: Nov-Mar

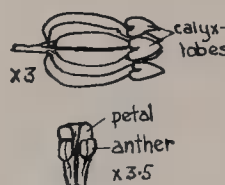
1 *S. juncea*

- A. Calyx-lobes cordate-auricular, acute, not peltate; partial umbels 4, each 3-flowered; anthers sub-globose.

Habit: Similar to *S. juncea* but more delicate; up to 30 cm high.

Distribn: Da (Guildford, Donnybrook), St, St (C) (Albany), Wa (Denmark).

Flg: Jan-Mar

2 *S. tenuior*17 *Actinotus*

- A. Umbels pedunculate.

(alternate A p. 296)

- B. Involucres large, 2.5-5.0 cm in diameter, silky-hairy.

- C. Anthers becoming purple; plants up to 60 cm high; heads large; outer involucral bracts acuminate, white, densely hairy.

Distribn: Da (Canning R., Darling Ra.), Ir (C) (Geraldton), Le (Eneabba), St (Stirling Ra.).

Flg: Sept-Dec

1 *A. leucocephalus*  
Flannel Flower

Small annual herb; outer involucral bracts very herbaceous, internal ones hairy; anthers dark purple; gyno-polygamous.

1a *A. leucocephalus*  
var. *nanella*



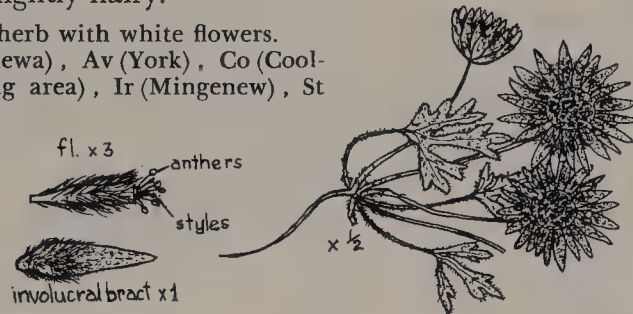
C. Anthers yellow; plants 5-20 cm high.

D. Plants 5-10 cm high; heads small to medium size (1-2 cm diameter); outer involucral bracts broad, acute or obtuse (never acuminate), only slightly hairy.

Habit: Small annual herb with white flowers.

Distribn: An-Ir (Mullewa), Av (York), Co (Coolgardie), Ey (L. King area), Ir (Mingenew), St (Katanning).

Flg: Oct-Dec



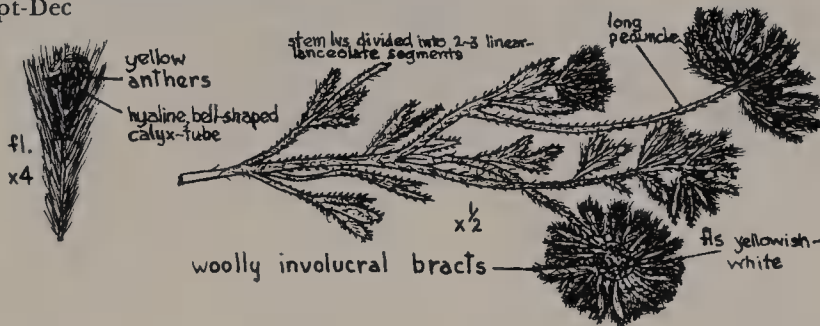
2 *A. humilis*

D. Plants up to 20 cm high, with short sturdy stems; involucral bracts and flowers very densely-woolly-hairy.

Habit: Annual herb which is usually to be found only after a bushfire has swept its habitat.

Distribn: Av (Tammin, Wongan Hills), Co (Merredin), Ey (Newdegate - Ravensthorpe).

Flg: Sept-Dec



3 *A. superbus*

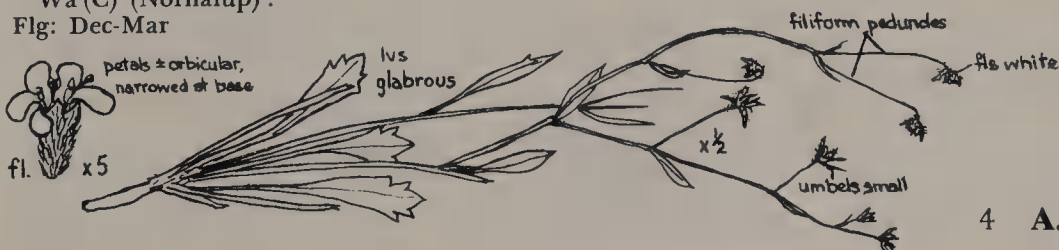
B. Involucres small, less than 1.5 cm in diameter.

C. Radical leaves cuneate, toothed, on long petioles; stem-leaves  $\pm$  entire.

Habit: Slender herbaceous perennial 13-30 cm high.

Distribn: Ey (C) (Esperance), St, St (C) (Albany), Wa (C) (Nornalup).

Flg: Dec-Mar



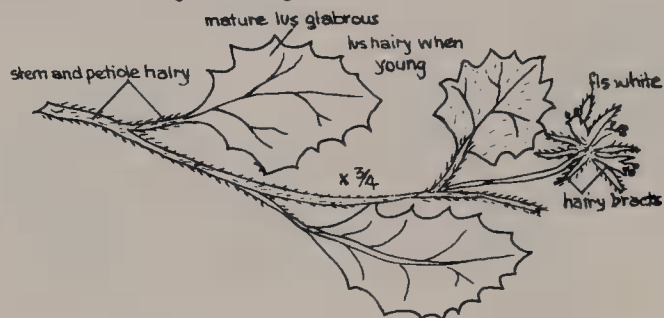
4 *A. omnifertilis*

- C. Radical leaves orbicular or rhomboidal, toothed, shortly petiolate.

Habit: Diffuse, branching plant up to  $\pm$  30 cm high.

Distribn: Av, St (districts east of Quairading, Narrogin). Rare.

Flg: Not recorded



5 *A. rhomboideus*

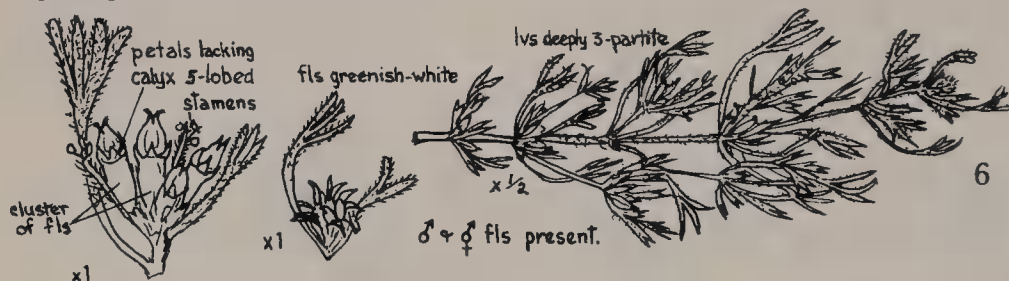
- A. Umbels  $\pm$  sessile, flowers clustered; leaves divided into linear lobes.

Habit: Small annual, usually hairy, 15-25 cm high.

Distribn: Da (Darlington), Ey (C) (Cape Arid Nat.

Pk), St (Stirling Ra.), St (C), Wa (Nannup).

Flg: Aug-Nov



6 *A. glomeratus*

## 18 *Chlaenosciadium*

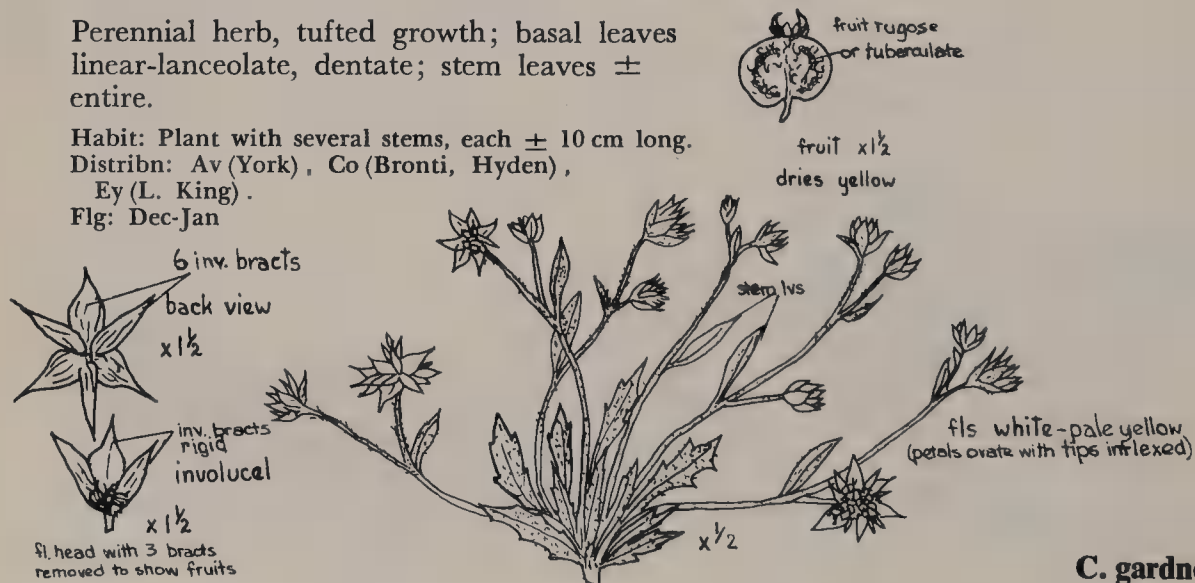
Perennial herb, tufted growth; basal leaves linear-lanceolate, dentate; stem leaves  $\pm$  entire.

Habit: Plant with several stems, each  $\pm$  10 cm long.

Distribn: Av (York), Co (Bronti, Hyden),

Ey (L. King).

Flg: Dec-Jan



*C. gardneri*

## Colour Plates

The justification for the inclusion of colour photographs of native plants is that they supplement the line drawings and facilitate quick and certain recognition. With this in mind a representative series of colour photographs was initially selected. When, however, it became apparent that owing to rising costs only a limited number of these could be included in Part IIIA, the President (Dr N. Marchant), Committee and members of the Wildflower Society of Western Australia—alerted by Mrs Evelyn Humphreys and Mrs Marion Blackwell (Vice-President)—spontaneously donated \$2000 and also launched an appeal. Later, to restore the number of colour photographs to the number originally envisaged, Mrs Evelyn Humphreys, as a tribute to the work of her late husband Fred (whose sustained and often arduous collecting and precise photographing in colour of our native plants has made it possible to present so many unusual species as they appeared in the living state), guaranteed whatever sum was still necessary, following the Wildflower Society's appeal.

The University of Western Australia Press and the author wish to express their thanks and appreciation for this magnificent help which has greatly enhanced the educational value of this book.







*Darwinia macrostegia*



*Darwinia meeboldii*



*Actinodium cunninghamii*



*Darwinia carnea*



*Darwinia oldfieldii*

PLATE I

*Darwinia neildiana*



*Darwinia collina*







*Chamelaucium confertiflorum*



*Chamelaucium drummondii*



*Chamelaucium megalopetalum*



*Verticordia spicata*



*Verticordia grandis*



*Verticordia ovalifolia*

## PLATE II

*Verticordia nitens*



*Verticordia brownii*







*Verticordia picta*



*Verticordia huegelii*



*Thryptomene australis*



*Verticordia oculata*



*Verticordia mitchelliana*

### PLATE III

*Verticordia chrysostachys*



*Verticordia preissii*



*Verticordia penicillaris*







*Calytrix fraseri*



*Calytrix glutinosa*



*Calytrix superba*



*Verticordia chrysantha*



*Verticordia muellerana*

## PLATE IV

*Calytrix decandra*



*Calytrix aurea*



*Calytrix strigosa*







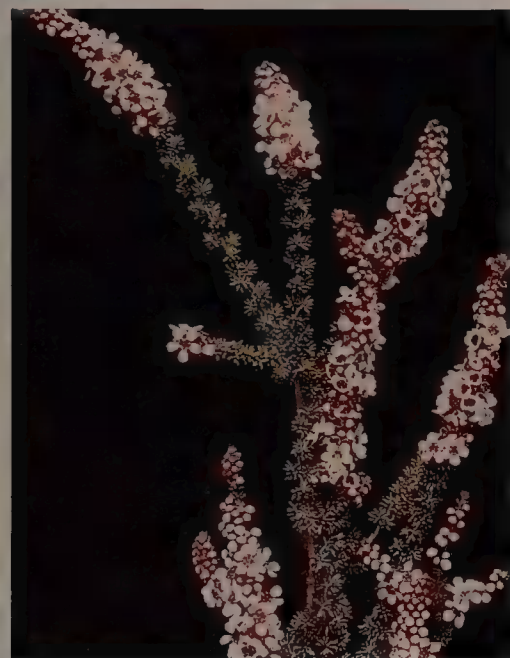
*Calythropsis aurea*



*Baeckea crispiflora*



*Baeckea behrii*



*Baeckea camphorosmae*



*Lhotskya purpurea*



*Lhotskya acutifolia*

## PLATE V

*Pileanthus peduncularis*



*Scholtzia involucrata*



*Scholtzia uberiflora*







*Wehlia thryptomenoides*



*Hypocalymma angustifolium*



*Hypocalymma robustum*



*Astartea fascicularis*



*Balaustion pulcherrimum*

## PLATE VI

*Agonis flexuosa*



*Agonis juniperina*



*Agonis obtusissima*







*Kunzea baxteri*



*Leptospermum laevigatum*



*Leptospermum firmum*



*Callistemon phoeniceus*



*Kunzea pulchella*



*Kunzea recurva*

## PLATE VII

*Callistemon speciosus*



*Lamarchea hakeifolia*



*Melaleuca acuminata*







*Melaleuca ciliosa*



*Melaleuca conothamnoides*



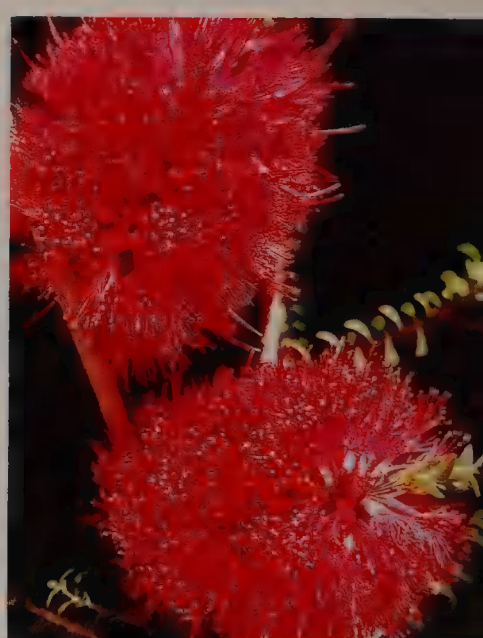
*Melaleuca globifera*



*Melaleuca elliptica*



*Melaleuca cardiophylla*



*Melaleuca coccinea*

## PLATE VIII

*Melaleuca cordata*



*Melaleuca concreta*



*Melaleuca fulgens*







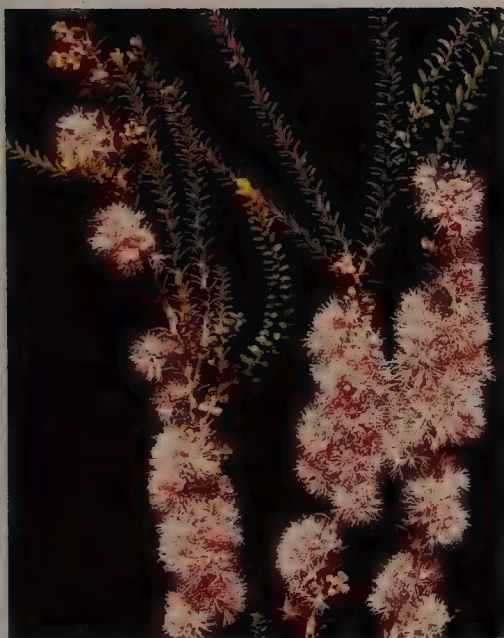
*Melaleuca megacephala*



*Melaleuca pulchella*



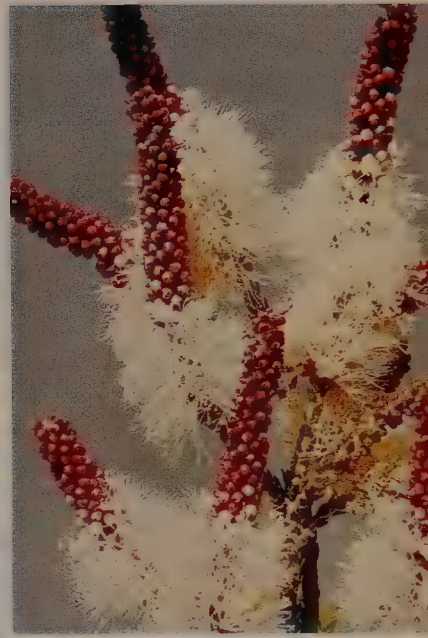
*Melaleuca scabra*



*Melaleuca depauperata*



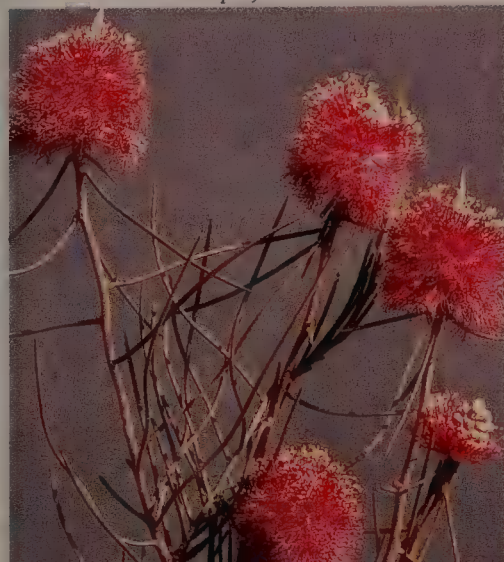
*Melaleuca spicigera*



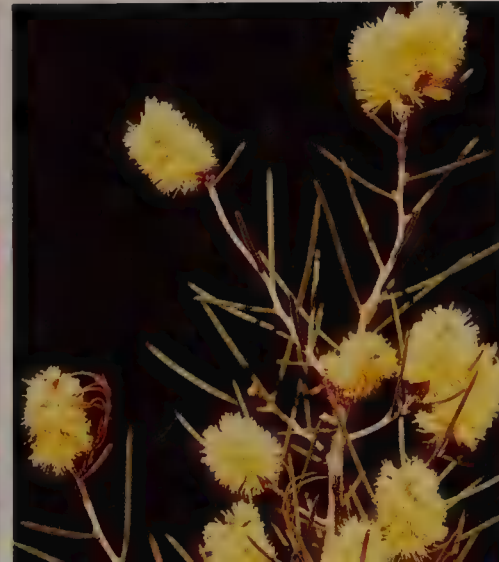
*Melaleuca huegelii*

## PLATE IX

*Melaleuca nematophylla*



*Melaleuca pungens*



*Melaleuca lateriflora*







*Melaleuca steedmanii*



*Melaleuca violacea*



*Melaleuca undulata*



*Melaleuca urceolaris*



*Melaleuca viminea*



*Beaufortia elegans*

## PLATE X

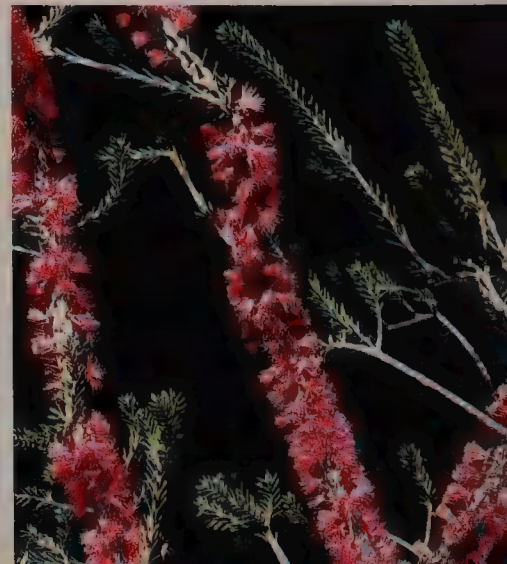
*Conothamnus trinervis*



*Beaufortia decussata*



*Melaleuca suberosa*







*Beaufortia sparsa*



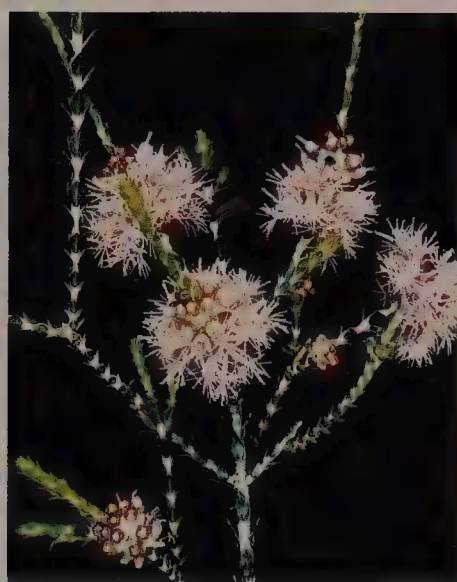
*Beaufortia squarrosa*



*Beaufortia incana*



*Beaufortia orbifolia*



*Regelia ciliata*



*Regelia velutina*

## PLATE XI

*Phymatocarpus porphyrocephalus*



*Eremaea ebracteata*



*Eremaea violacea*







*Calothamnus sanguineus*



*Calothamnus gracilis*



*Calothamnus homalophyllus*



*Calothamnus torulosus*



*Calothamnus longissimus*



*Eucalyptus caesia*

## PLATE XII

*Calothamnus gilesii*



*Calothamnus quadrifidus*



*Eucalyptus celastroides*



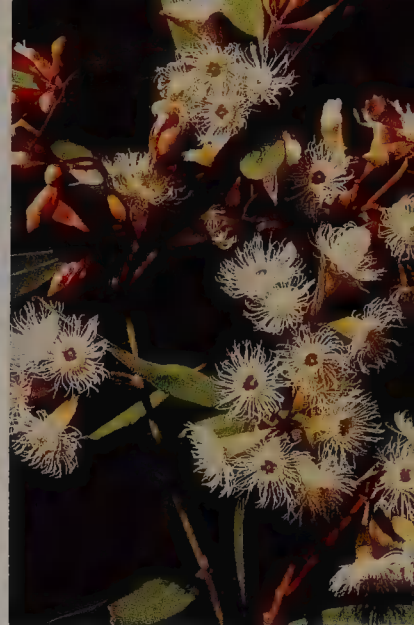




*Eucalyptus gardneri*



*Eucalyptus macrocarpa*



*Eucalyptus calycogona*



*Eucalyptus annulata*



*Eucalyptus platypus*

## PLATE XIII

*Eucalyptus desmondensis*



*Eucalyptus decurva*



*Eucalyptus calophylla*







*Eucalyptus ficifolia*



*Eucalyptus woodwardii*



*Eucalyptus kingsmillii*



*Eucalyptus stowardii*



*Eucalyptus lehmannii*

## PLATE XIV

*Eucalyptus websterana*



*Eucalyptus spathulata*



*Eucalyptus erythrocorys*







*Eucalyptus rhodantha*



*Eucalyptus preissiana*



*Eucalyptus staeri*



*Eucalyptus tetraptera*



*Eucalyptus youngiana*

## PLATE XV

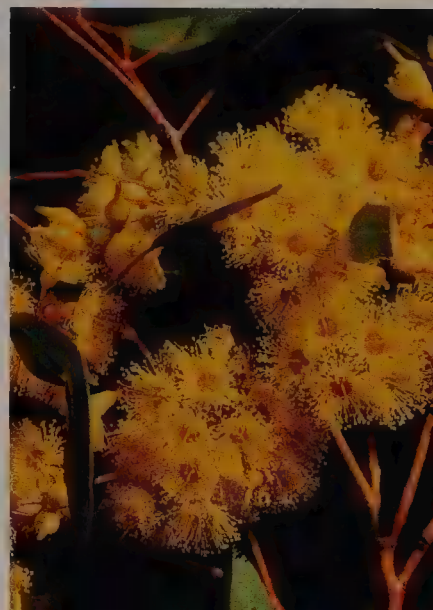
*Eucalyptus grossa*



*Eucalyptus flocktoniae*



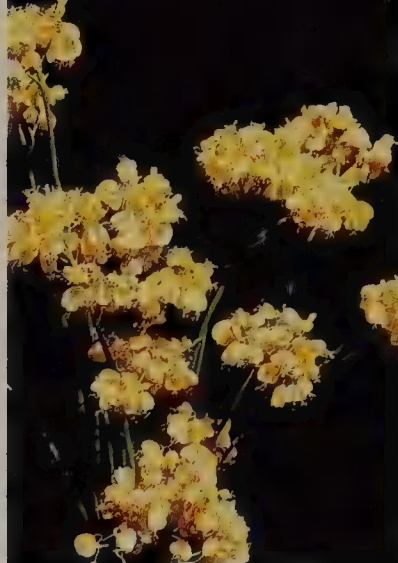
*Eucalyptus transcontinentalis*







*Xanthosia rotundifolia*



*Glischrocaryon aureum*



*Actinotus leucocephalus*



*Xanthosia tomentosa*



*Oenothera drummondii*

## PLATE XVI

*Trachymene caerulea*



*Eryngium rostratum*



*Platysace xerophila*



## Glossary

See also Part IV. Here only additional or redefined terms used in Parts IIIA and IIIB are given.

**Calyx-rim or calycine ring:** scar left by the operculum at the summit of the calyx-tube of the *Eucalyptus* flower-bud.

**Calyx-tube:** the enlarged floral receptacle ( $\equiv$  hypanthium, floral tube, torus) of the *Eucalyptus* flower-bud.

**Cinereus:** ashy-grey.

**Claviform:** thickened towards the apex, club-shaped.

**Compressed:** more or less flattened laterally; as in fruits of *Apium*.

**Conduplicate:** folded together lengthwise.

**Costate:** ribbed with  $\pm$  parallel lines distinctly raised; as in calyx-tube of some *Eucalyptus* species.

**Dipterous:** two-winged or with two wing-like processes.

**Disc:** circular plate between staminal ring and valves in fruits of *Eucalyptus*.

**Dorsal:** relating to the back; abaxial or under-surface of ■ spreading leaf.

**Gyno:** female or pertaining to female organs.

**Indefinite:** not limited or definite; as in stamens of some myrtaceous genera.

**Intra-marginal:** placed within the margin but near the edge; as in veins of leaves of some species of *Eucalyptus*.

**Intra-staminal ring:** refers to the disc region ( $\pm$  vertical or concave) between the staminal ring and the top of the disc (which may appear as a collar-like ring) before it slopes into the fruit—see *Eucalyptus pyriformis*.

**Mallee:** the native name for a *Eucalyptus* thicket with a bulbous root-stock (ligno-tuber) from which ascend several slender stems.

**Marlock:** a dwarf species of *Eucalyptus* with a reduced root-stock.

**Navicular:** boat-shaped.

**Persistent:** the opposite of deciduous; not falling off as in persistent bark of rough-barked *Eucalyptus* species.

**Pileate:** having the form of a cap; as in opercula of some *Eucalyptus* species.

**Polygamous:** producing some perfect and some unisexual flowers.

**Staminal ring:** scar of the filament bases of stamens in a *Eucalyptus* flower-bud.

**Valve:** the parts into which the wall of a capsular fruit may split to release the seeds, e.g. terminal valves (which are either enclosed or exerted) in *Eucalyptus* fruits.

**Ventral:** on the inner face or the one towards the axis; the upper surface of leaves.





# Bibliography

The following titles are essentially additional to those already cited in Part IV (1975), several of which however are also relevant for the plant families in this part.

## A. Floras and special literature

- Aplin, T. E. H. 1979. The Flora. In Brian J. O'Brien (ed.), *Environment and Science*. Univ. of Western Australia Press, Nedlands.
- Aston, H. I. 1973. *Aquatic plants of Australia*. Melbourne Univ. Press, Melbourne.
- Baird, A. M. 1977. Regeneration after fire in King's Park, Perth, W. Australia. *J. R. Soc. West. Aust.* **60** (1): 1-22.
- Beard, J. S. 1979. Phytogeographic regions. In J. Gentilli (ed.), *Western Landscapes*. Univ. of Western Australia Press, Nedlands.
- Bersot, E. 1882. *Lettre sur la Botanique* (Un moraliste). Paris.
- Bonnier, G. 1917/49. *Name this Flower. The Simple Way*. Translated by G. S. Boulger. Temple Press, Dent and Sons, London.
- Britten, J. 1912. The history of Aiton's 'Hortus Kewensis'. *J. Bot. Nov.* suppl. III: 1-16.
- Brown, R. 1810. *Prodromus florae Novae Hollandiae*. London.
- Carr, S. G. M. & Carr, D. J. 1976. The French contribution to the discovery of Australia and its flora. *Endeavour* **35** (124): 21-6.
- Davis, P. H. & Heyward, V. H. 1963/65. *Principles of Angiosperm Taxonomy*. Oliver & Boyd, Edinburgh.
- Erickson, R. 1969. *The Drummonds of Hawthornden*. Lamb Paterson, Perth.
- Grieve, B. J. 1975. Botany in Western Australia. A survey of progress, 1900-1971. *J. R. Soc. West Aust.* **58** (2): 33-53.
- 1979. Blackall, William Edward. *Australian Dictionary of Biography*. Vol. 7. Melbourne Univ. Press, Melbourne.
- Hall, N. 1978. *Botanists of the Eucalypts*. CSIRO, Melbourne.
- Hasluck, Alexandra 1955. *Portrait with Background. A Life of Georgiana Molloy*. Oxford Univ. Press, Melbourne.
- Hutchinson, J. 1973. *The Families of Flowering Plants*. 3rd edn. Clarendon Press, Oxford.
- Hügel, C. 1837. *Enumeratio Plantarum quas in Novae Hollandiae Ora Austro-Occidentali ad Fluvium Cygnorum et in Sinu Regis Georgii collegit Carolus liber baro de Hügel*. Vindobonae, F. Beck.
- Kenneally, K. F. 1977. *The Natural History of the Wongan Hills. The Flora*: 51-73. Handbook No. 11. Western Australian Naturalist's Club, Perth.
- Sharr, F. A. 1978. *Western Australian plant names and their meanings. A glossary*. Univ. of Western Australia Press, Nedlands.
- Tutin, T. G. et al. (eds) 1968. *Flora Europaea*. Vol. 2. Cambridge Univ. Press, Cambridge.
- Willis, J. H. 1951. Botany of the Russell Grimwade Expedition. *Memoirs of the National Museum, Melbourne*, **17**: 33-64.
- Zander [F. Encke/G. Buchheim] 1927-72. *Handwörterbuch des Pflanzennamen*. 10th edn. Verlag Eugen Ulmer, Stuttgart.

## B. Major references to plant families, genera and species included in Part IIIA

### MYRTACEAE

- Andrews, C. R. P. 1904. Additions to the Western Australian Flora. *J. W. Aust. Nat. Hist. Soc.*: 41-2 (Myrtaceae).

- Aplin, T. E. H. 1977. *A Check List of Eucalyptus of Western Australia*. Tech. Bull. 33 Dept of Agric. of W. Aust.
- Blake, S. T. 1968. A revision of *Melaleuca leucodendron* and its allies (Myrtaceae). *Contributions from the Queensland Herbarium* 1: 1-114.
- Blakely, W. F. 1965. *A Key to the Eucalypts*. 3rd edn. Forestry and Timber Bureau, Canberra.
- Boomsma, C. B. 1972. *Native Trees of South Australia*. Bull. 19. Woods and Forests Dept, South Australia.
- Brooker, M. I. H. 1972-76. *Nuytsia*. Several papers in Pts 1 and 2, describing new *Eucalyptus* species from W. Aust.
- Brooker, M. I. H. & Blaxell, D. F. 1978. Five new species of *Eucalyptus* from Western Australia. *Nuytsia* 2 (4): 220-31.
- Burbidge, N. T. 1947. Key to the South Australian species of *Eucalyptus*. *L'Hérit. Trans. R. Soc. S. Aust.* 71 (2): 137-63.
- Carr, S. G. M., Carr, D. J. & George, A. S. 1970. A new eucalypt from W. Australia. *Proc. R. Soc. Vict.* 83 (2): 159-70.
- Carr, D. J. & Carr, S. G. M. 1976. Two sympatric, sibling species of *Eucalyptus* from the west coast of Western Australia. *Proc. R. Soc. Vict.* 88 (1, 2): 1-14.
- Carrick, J. & Chorney, K. 1979. A review of *Melaleuca* (Myrtaceae) in South Australia. *J. Adelaide Bot. Gdns* 1 (5): 281-319. [Paper received too late for detailed consideration.]
- Chapman, A. D. 1976. Name changes in *Kunzea* (Myrtaceae). *Contrib. from Herbarium Australiense* 18: 1-2.
- Cheel, E. 1919. Notes on three species of *Melaleuca*. *Trans. Proc. R. Soc. S. Aust.* 43: 368-72.
- Chippendale, G. M. (ed.) 1968/9. *Eucalyptus Buds and Fruits*. Dept of National Development, Forestry and Timber Bureau, Canberra.
- Chippendale, G. M. 1973. *Eucalypts of the Western Australian Goldfields (and the adjacent wheat belt)*. Dept of Primary Industry, Forestry and Timber Bureau, Canberra.
- 1976. *Eucalyptus* nomenclature. *Aust. For. Res.* 7: 69-107.
- Domin, K. 1921/2. New additions to the flora of W. Aust. *Mém. Soc. Roy. des Sci. de Bohême* 20 (Myrtaceae): 77-96.
- Fitzgerald, W. F. 1903. Trees of Western Australia, with notes on their uses and distribution. *J. Proc. Mueller bot. Soc. W. Aust.* 1 (11): 3-78.
- 1904. Additions to the West Australian flora. *J. W. Aust. Nat. Hist. Soc.* 1: 17-22 (Myrtaceae).
- 1905. Some new species of W. Aust. plants. *J. W. Aust. Nat. Hist. Soc.* 11: 21-31.
- Gardner, C. A. 1952-1966. *Trees of Western Australia*. Nos 1-109. Dept. of Agriculture, W. Aust.
- 1964. Contributiones Florae Australiae Occidentalis XIII. *J. R. Soc. W. Aust.* 47 (2): 54-64. (Myrtaceae pp. 60-2.)
- Gardner, C. A. & George, A. S. 1963. Eight new plants from Western Australia. *J. R. Soc. W. Aust.* 46 (4): 129-38.
- George, A. S. 1966. Three new Western Australian plants and some name changes. *West Aust. Nat.* 10 (2): 28-32.
- 1967. Additions to the flora of W. Aust. Ten miscellaneous new species. *J. R. Soc. W. Aust.* 50 (4): 97-104. (Myrtaceae p. 99.)
- Hall, N., Johnston, R. & Chippendale, G. M. 1970. *Forest Trees of Australia*. 3rd edn. Dept of National Development, Forestry and Timber Bureau, Canberra.
- Hall, N. & Brooker, M. I. H. 1973+. *Forest Tree Series*. Australian Dept of Agriculture, Forestry and Timber Bureau, Canberra.
- Johnson, L. A. S. 1962. Studies in the taxonomy of *Eucalyptus*. *Contrib. N.S.W. Nat. Herb.* 3: 103-26.
- Kelly, S., Chippendale, G. M. & Johnston, R. D. Vol. I, 1969; Vol. II, 1978. *Eucalyptus*. T. Nelson, Aust. Ltd.
- Kessell, S. L. & Gardner, C. A. 1924. *Key to the Eucalypts of Western Australia*. Bull. 35 (see also 34), Forests Dept of W. Aust.

- Lehmann, J. G. C. 1844-5. *Plantae Preissianae*. Vol. I Myrtaceae (Auctore J. C. Schauer), pp. 96-158.
- Podger, F. D. & Chippendale, G. M. 1968. A new species of *Eucalyptus* from Western Australia. *J. R. Soc. W. Aust.* **51** (3): 65-7.
- Pryor, L. D. & Johnson, L. A. S. 1971. *A Classification of the Eucalypts*. Australian National Univ., Canberra.
- Turczaninow, N. 1847. Decas tertia generum . . . Myrtacearum xerocarpicarum atque Umbelliferarum. *Bulletin de la Société Impériale des Naturalistes de Moscou* **20** (1): 153-68.
- 1852. Myrtaceae xerocarpicae in Nova Hollandia. *Bulletin de la classe physico-mathématique de St. Petersburg* **10** (21): 322-346; (22): 394-428.
- Verdon, D. 1972. The genus *Phymatocarpus*. *Australian Plants* (Myrtaceae) **6**: 274-9.

## ONAGRACEAE (OENOTHERACEAE)

- Raven, P. H. & Engelhorn, T. E. 1971. New taxa and new combinations in Australian *Epilobium* (Onagraceae). *N.Z. J. Bot.* **9**: 345-50.
- Raven, P. H. & Raven, T. E. 1976. The genus *Epilobium* (Onagraceae) in Australasia: a systematic and evolutionary study. *N.Z. Dept Sci. Ind. Res. Bull.* **216**: 1-321.
- Tutin *et al.* (eds) 1968. *Flora Europaea*. Vol. 2.

## HALORAGACEAE

- Orchard, A. E. 1970. *Glischrocaryon*—the correct name for *Loudonia* (Haloragaceae). *Taxon* **19** (5): 823-4.
- 1975. *Taxonomic Revisions in the Family Haloragaceae*. I. The genera *Haloragis*, *Haloragodendron*, *Glischrocaryon*, *Meziella* and *Gonocarpus*. *Bulletin of the Auckland Institute and Museum* **10**: 1-299.
- 1977. Further studies on *Haloragis*, *Haloragodendron* and *Gonocarpus*. *Nuytsia* **2** (3): 126-43.
- Schindler, A. 1905. Halorrhagaceae. *Das Pflanzenreich* (Engler) **23**: 1-133. Berlin. Reprinted 1939.
- Smith, G. G. & Marchant, N. G. 1961. A census of aquatic plants of Western Australia. *West. Aust. Nat.* ■ (1): 15-17.

## APIACEAE (UMBELLIFERAE)

- Burbidge, N. T. 1954. The genus *Uldinia* J. M. Black. *Kew Bull.* **3**.
- Burt, B. L. 1940/41. New combinations in *Trachymene*. *J. Bot.* **78-79**: 44-6.
- Domin, K. 1908. Tableau abrégé des espèces du genre *Trachymene*. *Bull. Acad. Geogr. Bot.* **18**: 481-94.
- 1921-22. New additions to the flora of Western Australia. *Mém. Soc. Roy. des Sci. de Bohême* **21** (Umbelliferae): 96-8.
- George, A. S. 1967. Additions to the flora of Western Australia. Ten miscellaneous new species. *J. R. Soc. West. Aust.* **50** (4): 99 (Apiaceae).
- Keighery, G. J. 1979. Reinstatement of *Pentapeltis* (Apiaceae). *Brunonia*. In press.
- Norman, C. 1938. New genera in Umbelliferae. *J. Bot.* **76**: 198-200.
- 1939. Notes on the genus *Platysace* Bunge. *J. Bot.* **77**: 207-11.
- Sargent, O. H. 1923. Notes on Western Australian plants. *J. Bot.* **61**: 285-7.
- Short, P. 1979. *Apium* L. Sect. *Apium* (Umbelliferae) in Australasia. *J. Adelaide Bot. Gdns* **1** (4): 205-35.
- Tutin *et al.* (eds) 1968. *Flora Europaea*. Vol. 2. Cambridge Univ. Press, Cambridge.
- Wolff, H. 1913. *Das Pflanzenreich* (Engler) IV. 228. Umbelliferae-Saniculoideae. Heft **61**: 167-8. Reprinted 1958.





## Index of vernacular names

Introduced plants are indicated with an asterisk (\*).

Baeckea		Bullich	189
Broom	78		
Fleshy-leaved	68	Calytrix, Pink Summer	58
Large-flowered	81	Carrot	
Bell		Australian	292
Cranbrook	13	Wild	289
Fringed	14	Cauliflower	
Mogumber	11	Common	38
Mondurup	12	Northern	38
Pink Mountain	15	*Celery	291
Yellow Mountain	15	Celery, Sea	290
*Bishop's Weed	292	*Celery, Slender	290
Blackbutt		Centella	273
Albany	165	Clawflower	
Carne's	180	Barrens	154
Cleland's	175	Dense	153
Coastal	190	Murchison	155
Dundas	191	Cliff Net Bush	153
Goldfields	171	Coppercups	52
Kondinin	176	Coppercups	
Western Australian	201	Coastal	52
Yellow-flowered	180	Summer	52
Bloodwood, Variable-barked	211		
Blue Devil	293	Daisy	
Blue Lace Flower	288	Rottnest Island	288
Boongul	161	Swamp	10
Borec	125	Darwinia	
Bottlebrush		Murchison	16
Albany	101	Pom-pom	17
Goldfields	104	Rose	16
Granite	104	Dowerin Rose	173
Gravel	136		
Lesser	102	Eremaea	
Little	140	Rusty	144
One-sided	154	Violet	145
Pink	139	*Evening Primrose	240
Ravensthorpe	137	*Evening Primrose, Coastal	240
Sand-heath	137	*Evening Primrose, Sweet-scented	241
Stirling Range	135		
Swamp	137	Featherflower	
Woolly	138	Autumn	36
Box, Barlee	196	Bonzai	41
Box, Flooded	222		

Featherflower		Honey-myrtle	
Claw	34	Broom	123
Forrest's	27	Chenille	131
Hidden	29	Claw	130
Morrison	33	Corky	129
Mouse	39	Graceful	111
Painted	32	Grey	122
Pink Woolly	29	Hidden	128
Plumed	37	Rough	119
Rapier	30	Scarlet	104
Roe's	28	Wiry	118
Scarlet	26		
Spiked	27	Illyarrie	167
Variegated	40		
Wongan	35	Jarrah	165
*Fennel	291		
Flannel Flower	294	Kanna or Native Potato	276
		Karri	194
Gimlet	212	Kunzea	
Gimlet		Baxter's	101
Blue	192	Granite	101
Rough-barked	222	Mountain	98
Silver-topped	188		
Two-winged	183	Lace Flower, Blue	288
Gum			
Balladonia	176	Mahogany, Dundas	195
Blunt-budded River Red	219	Malallie	207
Burdett	157	Mallee	
Butter	215	Alexander River	191
Coral	170	Apple	203
Darling Range Ghost	215	Badgingarra	204
Drummond's	159	Balladonia	220
Flooded	218	Bell-fruited	191
Fuchsia	179	Bookleaf	199
Griffith's Grey	174	Boorabbin	177
Kopi	216	Boyagin	208
Lake Grace	203	Burracoppin	173
Lemon-flowered	201	Cap-fruited	184
Marble	202	Capped	188
Red-flowering	211	Coarse-leaved	183
Ribbon-barked	200	Comet Vale	206
Rosebud	180	Cowcowing	206
Salmon	215	Crowned	167
Salt River	162	Desmond	192
Scarlet Pear	169	Dongara	207
Steedman's	179	Ewart's	214
Strickland	180	Fluted-horn	162
Weeping	194	Four-winged	178
York	202	Giant	223
Gungurru	187	Goblet	205
		Gooseberry	182
*Hemlock	292	Hamelin Bay	171

Mallee		Marlock	
Hook-leaved	193	Bald Island	156
Hopetoun	207	Black	164
Jerdacuttup	168, 171	Long-flowered	164
Jutson's	221	White-leaved	182
Kalgan Plains	192	Marri	210
Kangaroo Island	193	Marri, Mountain	210
Kingscote	175	Melaleuca, Tangling	127
Kingsmill's	172	Merrit	161
Lake King	186	Mirret	181
Large-fruited	168	Moort	157
Lerp	172	Moort, Coastal	158
Lucky Bay	177	Moort, Red-flowered	178
Many-flowered	186	Morrel	
Mt Le Grand	183	Black	225
Narrow-leaved	220	Red	162
Narrow-leaved Red	199	Mottlecrah	189
Ninghan	224	Mouse Ears	153
Oil	213	Myrtle	
Oldfield's	190	Camphor	75
Open-fruited	157	Large	89
Pear-fruited	168	Lemon-scented	15
Red-flowered	184	Swan River	88
Ridge-fruited	172	White	90
Rose	216	Willow	94
Rough-fruited	169	Native Potato	276
Round-leaved	217		
Sandplain	205	Ooragmandee	210
Silver	218		
Slender	186	Paperbark	
Small-fruited	209	Salt-water	108
Soap	197	Swamp	133
Southern Cross Silver	218	Parsnip, Native	287
Spearwood	187	Pennywort	
Stiff-leaved	224	Hairy	267
Stoward's	162	Small	269
Tall Sand	163	Thread	271
Tammin	160	Trefoil	268
Twin Peaks Island	185	Peppermint	94
Victoria Desert	175	Pomegranate	
Victoria Spring	193	Bush	88
Webster's	220	Native	88
White	198	Pop-flower, Common	244
White-leaved	221	Prickfoot	293
Woodline	209	Prickly Bark	190
Woolburnup	169		
Yellow-flowered	200	Raspwort	
Mallet		Glandular	245
Blue	161	Shrubby	245
Brown	159	Swamp	251
Silver or White	160	Redheart	193
Swamp	159	Redwood	161

Regelia		Tingle	
Large or Barrens	141	Yellow	211
Robin Red Breast Bush	105	Tuart	174
Rottnest Is. Daisy	288		
		Wandoo	196
Scholtzia		Wandoo, Powderbark	196
Pink	74	Wandoo, Salmon-bark	214
Spiked	86	Water Milfoil	
Snap-and-rattle	203	Broad-leaf	259
Southern Cross	284	Common	259
Southern Cross, Lesueur	285	Hooded	260
Spongefruit	286	Red	259
Starflower		Small	260
Brush	54	Wattie	93
Pink	57	Waxflower	
Summer	54	Esperance	22
Superb	56	Geraldton	21
Stocking-tree	176	Large	22
		Walpole	24
		White Cedar	93
Tallerack	182	Willow Herb	
Tapeworm Plant	275	Hairy	238
Teatree		Smooth	239
Coast	95	Variable	239
Rottnest	132		
Silver	97	Yate	156
Swamp	95	Yate	
Thryptomene		Bushy	156
Hook-leaf	44	Slender-flowered	159
Rock	47	Swamp or Flat-topped	158
Tingle		Warted	157
Rates	201	Yorrell	203
Red	195		

## Index of scientific names

Synonymy is indicated where names are in parentheses. Also to facilitate recognition of name changes, particularly in genera with large numbers of species, the names of species in synonymy are followed by an = sign to the accepted species name.

Introduced species are indicated by \*.

Note. Distributions and flowering times which in earlier Parts were given with the Scientific Index are now incorporated in the text.

<i>Actinodium</i> Schau	1, 10	<i>prostratum</i> Labill. ex Vent.,	
<i>cunninghamii</i> Schau. ex Lindl.	10	subsp. <i>prostratum</i> var. <i>filiforme</i>	
<i>Actinotus</i> Labill.	294	(A. Rich.) Kirk	290
<i>glomeratus</i> Benth.	296	<i>Astartea</i> DC.	4, 66
<i>humilis</i> (F. Muell. et Tate) Domin	295	<i>ambigua</i> F. Muell.	67
( <i>A. leucocephalus</i> Benth. var.		( <i>Baackea ambigua</i> (F. Muell.)	
<i>humilis</i> F. Muell. et Tate)		Nied.)	
<i>leucocephalus</i> Benth.	294	<i>clavifolia</i> C. A. Gardn.	88
var. <i>nanella</i> Sarg.	294	<i>fascicularis</i> (Labill.) DC.	87
<i>omnifertilis</i> (F. Muell.) Benth.	295	( <i>A. clavulata</i> Turcz.)	
<i>rhomboideus</i> (Turcz.) Benth.	296	<i>heteranthera</i> C. A. Gardn.	67
<i>superbus</i> Sarg.	295		
<i>Agonis</i> DC.	5, 92	<i>Baackea</i> L.	4, 66
<i>flexuosa</i> (Spreng.) Schau.	94	<i>arbuscula</i> (R. Br.) Benth.	75
var. <i>latifolia</i> Schau.	94	<i>astarteoides</i> Benth.	75
<i>floribunda</i> Turcz.	92	<i>baileyana</i> C. A. Gardn.	76
<i>grandiflora</i> Benth.	93	<i>behrii</i> (Schltdl.) F. Muell.	78
<i>hypericifolia</i> Schau.	93	<i>blackettii</i> F. Muell.	70
( <i>A. theaeformis</i> Schau.)		<i>camphorosmae</i> Endl.	75
<i>juniperina</i> Schau.	93	<i>carnosa</i> S. Moore	68
<i>linearifolia</i> (DC.) Schau.	92	<i>clavifolia</i> S. Moore	77
var. <i>conspicua</i> (Schau.) Domin	92	<i>corymbulosa</i> Benth. = <i>leptophylla</i>	85
<i>marginata</i> (Labill.) Schau.	92	(Turcz.) Domin	
<i>obtusissima</i> F. Muell.	94	<i>corynophylla</i> (F. Muell.) F. Muell.	78
<i>parviceps</i> Schau.	93	<i>crassifolia</i> Lindl.	77
<i>spathulata</i> Schau.	92	var. <i>icosandra</i> F. Muell. ex Benth.	81
var. <i>angustifolia</i> Benth.	92	<i>crispiflora</i> (F. Muell.) F. Muell.	86
<i>undulata</i> Benth.	93	var. <i>tenuior</i> Ewart	86
<i>Ammi</i> L.	292	<i>cryptandroides</i> F. Muell.	80
* <i>majus</i> L.	292	<i>deciapiens</i> W. V. Fitzg.	70, 76
APIACEAE	261	<i>dimorphandra</i> (F. Muell.) Benth.	69
<i>Apium</i> L.	290	<i>diosmoides</i> (Turcz.) Domin (nom.	
<i>annuum</i> Short	291	illeg.) = <i>ovalifolia</i> (F. Muell.)	
* <i>graveolens</i> L.	291	F. Muell.	87
<i>prostratum</i> Labill. ex Vent.,		<i>elderana</i> Pritzel	76
subsp. <i>prostratum</i>	290	<i>exserta</i> S. Moore	83



<i>Baeckea</i> (contd)		<i>interstans</i> F. Muell.	140
<i>floribunda</i> Benth.	78	<i>macrostemon</i> Lindl.	135
<i>fumana</i> (Schau.) F. Muell.	68	<i>micrantha</i> Schau.	140
<i>gracilis</i> (Schau.) C. A. Gardn.	79	var. <i>empetrifolia</i> Benth.	140
<i>grandibracteata</i> Pritzel	80	var. <i>puberula</i> Benth.	140
<i>grandiflora</i> Benth.	81	<i>orbifolia</i> F. Muell.	137
<i>grandis</i> Pritzel	82	<i>purpurea</i> Lindl.	138
<i>imbricata</i> S. Moore nom. illegit., see sp.	85	<i>schaueri</i> Preiss ex Schau.	139
<i>latens</i> C. R. P. Andr.	77	<i>sparsa</i> R. Br. in Ait.	137
<i>leptophylla</i> (Turcz.) Domin	85	<i>squarrosa</i> Schau.	137
( <i>B. corymbulosa</i> Benth.)		<i>Buplerum</i> L.	289
<i>leptospermoides</i> C. A. Gardn.	85	<i>*lancifolium</i> Hornem.	289
<i>maidenii</i> Ewart et White	73	( <i>B. protractum</i> Hoffm. et Link)	
<i>muricata</i> C. A. Gardn.	79		
<i>ochropetala</i> F. Muell.	79	<i>Callistemon</i> R. Br.	6, 101
<i>ovalifolia</i> (F. Muell.) F. Muell.	87	<i>phoeniceus</i> Lindl.	102
( <i>B. diosmoides</i> (Turcz.) Domin)		<i>speciosus</i> (Sims) DC.	101
<i>oxycoccoides</i> (Turcz.) Benth.	69	<i>Calothamnus</i> Labill.	9, 146
<i>pachyphylla</i> Benth.	74	<i>affinis</i> Turcz.	152
<i>pentagonantha</i> F. Muell.	84	( <i>C. microcarpus</i> F. Muell.)	
<i>platycephala</i> Pritzel	73	var. <i>longistamineus</i> Domin	151, 152
<i>platystemona</i> Benth.	68	var. <i>teres</i> Benth.	152
<i>preissiana</i> (Schau.) Druce	78	<i>asper</i> Turcz.	154
( <i>B. pentandra</i> (F. Muell.) F. Muell.)		<i>blepharanthus</i> F. Muell.	150
<i>pulchella</i> DC.	83	<i>blepharospermus</i> F. Muell.	147
<i>Pygmaea</i> (R. Br.) Benth.	75	var. <i>glaber</i>	147
<i>robusta</i> (F. Muell.) Benth.	82	<i>chrysanthus</i> F. Muell.	147
<i>schollerifolia</i> Lehm.	69	<i>gibbosus</i> Benth.	147
sp.	85	<i>gilesii</i> F. Muell.	148
<i>staminosa</i> Pritzel	82	<i>gracilis</i> R. Br. in Ait.	146
<i>stowardii</i> S. Moore	80	<i>homalophyllus</i> F. Muell.	155
<i>subcuneata</i> F. Muell.	87	<i>lateralis</i> Lindl.	152
<i>tenuifolia</i> (Turcz.) Domin	69	forma <i>crassus</i> Benth.	152
( <i>B. drummondii</i> Benth.)		forma <i>longifolius</i> (Lehm.) Benth.	152
<i>tenuiramea</i> S. Moore	72	forma <i>rigidus</i> Benth.	152
<i>tetragona</i> (F. Muell.) Benth.	70	<i>lehmannii</i> Schau.	151
<i>thymoides</i> S. Moore	84	<i>longissimus</i> F. Muell.	149
<i>uncinella</i> Benth.	77	<i>oldfieldii</i> F. Muell.	148
<i>Balaustion</i> Hook.	5, 88	<i>pachystachyus</i> Benth.	149
<i>microphyllum</i> C. A. Gardn.	88	<i>pinifolius</i> F. Muell.	153
<i>pulcherrimum</i> Hook.	88	<i>planifolius</i> Lehm.	151
<i>Beaufortia</i> R. Br.	8, 135	var. <i>pallidifolius</i> Benth.	151
<i>anisandra</i> Schau.	136	<i>preissii</i> Schau.	150
<i>bracteosa</i> Diels	138	<i>quadrididus</i> R. Br. in Ait.	154
<i>dampieri</i> A. Cunn.	139	forma <i>acerosus</i> (Colla) Benth.	154
<i>decussata</i> R. Br. in Ait.	136	forma <i>obtusus</i> Benth.	154
<i>elegans</i> Schau.	139	<i>rupestris</i> Schau.	153
var. <i>minor</i> Benth.	140	<i>sanguineus</i> Labill.	149
<i>eriocephala</i> W. V. Fitzg.	138	<i>schaueri</i> Lehm.	153
<i>heterophylla</i> (Turcz.) F. Muell.	135	<i>torulosus</i> Schau.	150
( <i>B. cyrtodonta</i> (Turcz.) Benth.)	140	var. <i>leptophylla</i> Benth.	150
<i>incana</i> (Benth.) George	136	<i>validus</i> S. Moore	154

<i>Calothamnus</i> (contd)			
<i>villosus</i> R. Br. in Ait.	148	( <i>Hydrocotyle asiatica</i> [non L.] Black)	
( <i>C. robustus</i> Schau.)		( <i>Hydrocotyle cordifolia</i> Hook. f.)	
var. <i>ericifolius</i> Benth.	148	<i>Chamelaucium</i> Desf.	2, 20
<i>Calythropsis</i> C. A. Gardn.	4, 66	<i>axillare</i> F. Muell. ex Benth.	22
<i>aurea</i> C. A. Gardn.	66	<i>brevifolium</i> Benth.	23
<i>Calytrix</i> Labill.	3, 53	<i>ciliatum</i> Desf.	20
<i>angulata</i> Lindl.	53	<i>confertiflorum</i> Domin	22
<i>asperula</i> Schau.	54	<i>drummondii</i> Meisn.	24
var. <i>gracilis</i> Benth.	54	<i>hallii</i> Ewart	24
<i>aurea</i> Lindl.	54	<i>heterandrum</i> Benth.	21
<i>birdii</i> F. Muell.	58	<i>megalopetalum</i> F. Muell. ex Benth.	22
<i>brachyphylla</i> Turcz.	60	<i>micranthum</i> (Turcz.) Domin	21
<i>brevifolia</i> Meisn.	60	( <i>C. gracile</i> F. Muell.)	
<i>breviseta</i> Lindl.	56	<i>pauciflorum</i> (Turcz.) Benth.	23
<i>creswellii</i> F. Muell.	59	sp.	24
<i>decandra</i> DC.	57	<i>uncinatum</i> Schau.	21
<i>depressa</i> Turcz.	53, 57	var. <i>leptophyllum</i> Benth.	21
<i>desolata</i> S. Moore	60	<i>virgatum</i> Endl.	23
<i>empetroides</i> Schau.	59	<i>Chlaenosciadium</i> Norman	296
<i>flavescens</i> A. Cunn.	54	<i>gardneri</i> C. Norman	296
var. <i>drummondii</i> (Meisn.) Benth.	54	<i>Ciclospermum</i> (Lag.) DC.	290
var. <i>curtophylla</i> Benth.	54	<i>leptophyllum</i> (Pers.) Sprague	290
( <i>C. curtophylla</i> A. Cunn.)		<i>Conium</i> L.	292
var. <i>tenella</i> (Meisn.) Benth.	54	* <i>maculatum</i> L.	292
<i>fraseri</i> A. Cunn.	58	<i>Conothamnus</i> Lindl.	7, 134
<i>glutinosa</i> Lindl.	59	<i>aureus</i> (Turcz.) Domin	134
<i>gracilis</i> Benth.	61	( <i>C. divaricatus</i> Benth.)	
<i>granulosa</i> Benth.	59	<i>neglectus</i> Diels	135
<i>leschenaultii</i> Schau.	62	<i>trinervis</i> Lindl.	134
<i>muricata</i> F. Muell.	61		
var. <i>parvifolia</i> Benth.	61	<i>Darwinia</i> Rudge	2, 10
<i>oldfieldii</i> Benth.	61	<i>acerosa</i> W. V. Fitzg.	14
<i>plumulosa</i> F. Muell.	55	<i>carnea</i> C. A. Gardn.	11
<i>puberula</i> Meisn.	54	<i>citriodora</i> (Endl.) Benth.	15
<i>sapphirina</i> Lindl.	56	<i>collina</i> C. A. Gardn.	15
<i>simplex</i> Lindl.	57	<i>diosmoides</i> (DC.) Benth.	17
<i>stenophylla</i> W. V. Fitzg.	61	<i>forrestii</i> F. Muell. (see note)	18
<i>stipulosa</i> W. V. Fitzg.	55	<i>helichrysoides</i> (Meisn.) Benth.	12
<i>stowardii</i> S. Moore	58	<i>hypericifolia</i> (Turcz.) Domin	12
<i>strigosa</i> A. Cunn.	55, 57	( <i>D. hookerana</i> (Meisn.) Benth.)	
<i>superba</i> C. A. Gardn. et George	56	<i>leiostyla</i> (Turcz.) Domin	13
<i>tenuifolia</i> Meisn.	57	( <i>D. meissneri</i> (Kipp.) Benth.)	
var. <i>rigidior</i> Benth.	57	( <i>Genetyllis oxylepis</i> Turcz.)	
<i>tenuiramea</i> Turcz.	56	<i>luehmannii</i> F. Muell. et Tate	16
<i>tetragona</i> Labill.	58	<i>macrostegia</i> (Turcz.) Benth.	12
<i>variabilis</i> Lindl.	60	<i>masonii</i> C. A. Gardn.	13
<i>watsonii</i> F. Muell. et Tate	55	<i>meeboldii</i> C. A. Gardn.	13
<i>Centella</i> L.	273	<i>neildiana</i> F. Muell.	14
<i>cordifolia</i> (Hook. f.) Nannf.	273	<i>oederioides</i> (Turcz.) Benth.	14
( <i>Centella asiatica</i> sens. auctt. Aust., non (L.) Urban)		<i>oldfieldii</i> Benth.	15
		<i>pauciflora</i> Benth.	17

<i>Darwinia</i> (contd)		<i>anceps</i> (Maiden) Blakely	193
<i>pmelioides</i> Cayzer et F. W. Wakef.	11	<i>angulosa</i> Schau.	172
<i>pinifolia</i> (Lindl.) Benth.	19	var. <i>ceratocorys</i> Blakely = <i>incrassata</i>	
<i>polycephala</i> C. A. Gardn.	17	Labill.	174
<i>purpurea</i> (Endl.) Benth.	16	var. <i>robusta</i> C. A. Gardn. =	
<i>repens</i> George	19	<i>erythrandra</i> Blakely et Steedman	180
<i>rhadinophylla</i> F. Muell.	18	<i>angustissima</i> F. Muell.	220
<i>sanguinea</i> (Meisn.) Benth.	19	<i>annulata</i> Benth.	157
<i>speciosa</i> (Meisn.) Benth.	11	<i>aquilina</i> Brooker	183
<i>squarrosa</i> (Turcz.) Domin	15	<i>astringens</i> (Maiden) Maiden	159
( <i>D. fimbriata</i> (Kipp.) Benth.)		<i>balladoniensis</i> Brooker	220
<i>thymoides</i> (Lindl.) Benth.	18	<i>baudiniana</i> D. J. et S. G. M. Carr	209
<i>verticordina</i> (F. Muell.) Benth.	19	<i>beardiana</i> Brooker et Blaxell	160
<i>vestita</i> (Endl.) Benth.		<i>brachycorys</i> Blakely	206
<i>virescens</i> (Meisn.) Benth.	16	<i>brachyphylla</i> C. A. Gardn.	199
<i>Daucus</i> L.	292	<i>brevistylis</i> Brooker	201
<i>glochidiatus</i> (Labill.) Fisch., Mey.		<i>brockwayi</i> C. A. Gardn.	195
et Avé-Lall.	292	<i>buprestium</i> F. Muell.	203
<i>Epilobium</i> L.	238	<i>burdettiana</i> Blakely et Steedman	157
<i>billardierianum</i> Ser. subsp.		<i>burracoppinensis</i> Maiden et Blakely	173
<i>billardierianum</i>	239	<i>caesia</i> Benth.	187
subsp. <i>cinereum</i> (A. Rich.) Raven		<i>calicicola</i> Brooker	171
et Engelhorn	239	<i>calophylla</i> Lindl.	210
subsp. <i>intermedium</i> Raven et		(Note. Never validly published by	
Engelhorn	239	R. Br. pers. comm. P. Wilson)	
<i>hirtigerum</i> A. Cunn.	238	var. <i>maideniana</i> Hochr. = <i>calophylla</i>	210
<i>Eremaea</i> Lindl.	9, 143	<i>calycogona</i> Turcz.	182
<i>acutifolia</i> F. Muell.	144	<i>camaldulensis</i> Dehnh. var. <i>obtus</i>	
<i>beaufortioides</i> Benth.	145	Blakely	219
<i>ebracteata</i> F. Muell.	145	<i>campaspe</i> S. Moore	188
<i>fimbriata</i> Lindl.	144	<i>carnabyi</i> Blakely et Steedman	217
( <i>E. rosea</i> C. A. Gardn. et George)		<i>carnei</i> C. A. Gardn.	180
<i>pauciflora</i> (Endl.) Druce	144	<i>celastroides</i> Turcz.	181
( <i>E. pilosa</i> Lindl.)		<i>cerasiformis</i> Brooker et Blaxell	187
( <i>E. ericifolia</i> Lindl.)		<i>chrysantha</i> Blakely et Steedman	
<i>purpurea</i> C. A. Gardn.	144	( <i>sepulcralis</i> F. Muell. var.	
sp.	143	<i>robusta</i> C. A. Gardn.)	
sp. var.	143	= hybrid <i>preissiana</i> × <i>sepulcralis</i>	197
<i>violacea</i> F. Muell.	145	<i>clelandii</i> (Maiden) Maiden	175
<i>Eryngium</i> L.	293	<i>comitae-vallis</i> Maiden	206
<i>rostratum</i> Cav. ( <i>E. pinnatifidum</i>		(type considered possible hybrid	
Bunge) (see note in text)	293	<i>concinna</i> × <i>ovularis</i> )	
var. <i>subdecumbens</i> Benth.	293	<i>concinna</i> Maiden et Blakely	175
<i>vesiculosum</i> Labill.	293	<i>conglobata</i> (R. Br. ex Benth.) Maiden	176
<i>Eucalyptus</i> L'Hérit.	9, 155	( <i>E. dumosa</i> A. Cunn. var. <i>conglobata</i>	
Note. The text should be consulted for		R. Br. ex Benth.)	
additional information and foreshadowed		<i>conglobata</i> var. <i>anceps</i> Maiden =	
status changes.		<i>anceps</i> (Maiden) Blakely	193
<i>E. accedens</i> W. V. Fitzg.	196	<i>conglobata</i> subsp. <i>fraseri</i> Brooker	
<i>acies</i> Brooker	169	= <i>fraseri</i> (Brooker) Brooker	176
<i>albida</i> Maiden et Blakely	221	<i>cooperana</i> F. Muell.	186
		<i>cornuta</i> Labill.	156

<i>Eucalyptus</i> (contd)			
<i>coronata</i> C. A. Gardn.	167	<i>gittinsii</i> Brooker et Blaxell	182
( <i>E. mitrata</i> C. A. Gardn.)		<i>gomphocephala</i> DC.	174
<i>corrugata</i> Luehm.	169	<i>gongylocarpa</i> Blakely	202
<i>crucis</i> Maiden	218	<i>goniantha</i> Turcz. subsp. <i>goniantha</i>	
<i>cylindriflora</i> Maiden et Blakely	198	( <i>E. kessellii</i> Maiden et Blakely)	168, 171
<i>cylindrocarpa</i> Blakely	209	subsp. <i>semiglobosa</i> Brooker	170
<i>decipiens</i> Endl.	193	<i>gracilis</i> F. Muell.	203
<i>decurva</i> F. Muell.	186	var. <i>yilgarnensis</i> Maiden = <i>gracilis</i>	203
<i>deflexa</i> Brooker	186	<i>grasbyi</i> Maiden et Blakely =	
<i>desmondensis</i> Maiden et Blakely	192	<i>longicornis</i> (F. Muell.) F. Muell.	
<i>dichromophloia</i> F. Muell.	211	ex Maiden	162
<i>dielsii</i> C. A. Gardn.	184	<i>griffithsii</i> Maiden	174
<i>diptera</i> C. R. P. Andr.	183	var. <i>angustiuscula</i> Blakely =	
<i>diversicolor</i> F. Muell.	194	<i>griffithsii</i>	175
<i>diversifolia</i> Bonpl.	197	<i>grossa</i> F. Muell. ex Benth.	183
<i>dongarraensis</i> Maiden et Blakely	207	<i>guilfoylei</i> Maiden	211
<i>doratoxylon</i> F. Muell.	187	<i>haematoxylon</i> Maiden	210
<i>drummondii</i> Benth.	159	<i>incrassata</i> Labill.	172
<i>dundasii</i> Maiden	191	( <i>E. angulosa</i> Schau. var. <i>ceratocorys</i>	
<i>ebbanoensis</i> Maiden	205	Blakely)	
<i>effusa</i> Brooker	222	<i>insularis</i> Brooker	185
<i>eremophila</i> (Diels) Maiden	163, 164	<i>jacksonii</i> Maiden	195
subsp. <i>pterocarpa</i> (Blakely et		<i>johnsoniana</i> Brooker et Blaxell	206
Steedman) L. R. S. Johnson et		<i>jucunda</i> C. A. Gardn.	204
Blaxell = <i>eremophila</i>	164	<i>jutsonii</i> Maiden	221
<i>erythrandra</i> Blakely et Steedman	180	<i>kalganensis</i> Maiden = hybrid	
( <i>E. angulosa</i> Schau. var. <i>robusta</i>		<i>marginata</i> × <i>preissiana</i>	198
C. A. Gardn.)		<i>kessellii</i> Maiden et Blakely =	
= hybrid <i>angulosa</i> × <i>tetraptera</i>		<i>E. goniantha</i> Turcz subsp. <i>goniantha</i>	184
<i>erythrocorys</i> F. Muell.	167	<i>kingsmillii</i> Maiden et Blakely	172
<i>erythronema</i> Turcz.	184	<i>kochii</i> Maiden et Blakely	224
var. <i>marginata</i> (Benth.) Domin	185	( <i>E. oleosa</i> F. Muell. var. <i>kochii</i>	
<i>eudesmioides</i> F. Muell.	207	(Maiden et Blakely) C. A.	
var. <i>globosa</i> Blakely		Gardn.)	
= <i>eudesmioides</i>	207	<i>kondininensis</i> Maiden et Blakely	176
<i>ewartiana</i> Maiden	214	<i>kruseana</i> F. Muell.	199
<i>exilis</i> Brooker	208	<i>laeliae</i> Podger et Chippendale	215
<i>falcata</i> Turcz.	160	<i>lanepoolei</i> Maiden	214
var. <i>ecostata</i> Maiden = <i>falcata</i>	160	<i>lehmannii</i> (Preiss ex Schau.) Benth.	156
<i>ficifolia</i> F. Muell.	211	<i>leptocalyx</i> Blakely	207
<i>flocktoniae</i> (Maiden) Maiden	161	<i>leptopoda</i> Benth.	160
<i>foecunda</i> Schau.	199	<i>lesouefii</i> Maiden	171
( <i>E. leptophylla</i> F. Muell. ex Miq.)		<i>ligulata</i> Brooker	177
<i>formanii</i> C. A. Gardn.	221	<i>longicornis</i> (F. Muell.) F. Muell. ex	
<i>forrestiana</i> Diels subsp. <i>forrestiana</i>	179	Maiden	162
subsp. <i>dolichorhyncha</i> Brooker	179	( <i>E. oleosa</i> F. Muell. ex Miq. var	
<i>fraseri</i> (Brooker) Brooker	176	<i>longicornis</i> F. Muell.)	
<i>gardneri</i> Maiden	161, 164	( <i>E. grasbyi</i> Maiden et Blakely)	
( <i>redunca</i> Schau. var. <i>exymitra</i>		<i>loxophleba</i> Benth.	202
Maiden)		subsp. <i>gratae</i> Brooker	203
<i>georgei</i> Brooker et Blaxell	190	<i>lucasii</i> Blakely	196
		<i>macrandra</i> F. Muell. ex Benth.	164

- Eucalyptus* (contd)
- macrocarpa* Hook. 189
- macrocera* Turcz. 156
- marginata* Donn ex Sm. 165
- megacarpa* F. Muell. 189
- megacornuta* C. A. Gardn. 157
- melanoxydon* Maiden 225
- merrickiae* Maiden et Blakely 205
- (*E. scyphocalyx* (F. Muell. ex Benth.)  
    Maiden et Blakely)
- micranthera* F. Muell. ex Benth. 191
- microtheca* F. Muell. 222
- nutans* F. Muell. 178
- occidentalis* Endl. 158
- var. *stenantha* Diels ex Maiden 159
- oldfieldii* F. Muell. 190
- oleosa* F. Muell. ex Miq. var. *oleosa* 223
- var. *borealis* C. A. Gardn. 224
- var. *glauca* Maiden
- = *transcontinentalis* Maiden
- var. *kochii* (Maiden et Blakely)  
    C. A. Gardn. = *kochii* Maiden  
    et Blakely 224
- var. *longicornis* F. Muell.  
    = *longicornis* (F. Muell.) F.  
    Muell. ex Maiden 162
- var. *plenissima* C. A. Gardn.  
    = *plenissima* (C. A. Gardn.)  
    Brooker 213
- oraria* L. A. S. Johnson 210
- orbifolia* F. Muell. 217
- ovularis* Maiden et Blakely 209
- pachyloma* Benth. 192
- patens* Benth. 201
- pendens* Brooker 204
- pileata* Blakely 188
- platycorys* Maiden et Blakely 177
- platypus* Hook. 157, 177
- var. *heterophylla* Blakely 158, 179
- plenissima* (C. A. Gardn.) Brooker 213
- preissiana* Schau. 191
- pyriformis* Turcz. 168
- var. *elongata* Maiden = *pyriformis* 173
- subsp. *youngiana* (F. Muell.) Boomsma  
    = *youngiana* F. Muell. 168
- redunca* Schau. 164, 198
- var. *angustifolia* Benth.  
    = *xanthonema* Turcz. 200
- var. *elata* Benth. = *wandoo* Blakely 196
- var. *melanophloia* Benth.  
    = *redunca* Schau. 165, 198
- var. *oxymitra* Maiden = *gardneri*  
    Maiden 161
- rhodantha* Blakely et Steedman 216
- var. *petiolaris* Blakely et Steedman  
    = *rhodantha* 217
- rigidula* Maiden 224
- roycei* S. G. M. Carr, D. J. Carr, et  
    George 181
- rudis* Endl. 218
- rugosa* R. Br. ex Blakely 175
- salmonophloia* F. Muell. 215
- salubris* F. Muell. 212
- var. *glauca* Maiden 192
- sargentii* Maiden 162
- scyphocalyx* (F. Muell. ex Benth.) 205
- Maiden et Blakely = *merrickiae*  
    Maiden et Blakely
- sepulcralis* F. Muell. 194
- var. *robusta* C. A. Gardn. 197
- = *chrysantha* Blakely et Steedman  
        = hybrid *preissiana* × *sepulcralis*
- sheathiana* Maiden 200, 202
- spathulata* Hook. 159, 213
- subsp. *grandiflora* (Benth.) 213  
    L. A. S. Johnson et Blaxell
- staeri* (Maiden) Kessell et C. A. Gardn. 165
- steedmanii* C. A. Gardn. 179
- stoatei* C. A. Gardn. 169
- stowardii* Maiden 162, 164
- striatocalyx* W. V. Fitzg. 216
- stricklandii* Maiden 180
- tamala* D. J. et S. G. M. Carr 209
- tetragona* (R. Br.) F. Muell. 181, 182
- tetraptera* Turcz. 178
- todtiana* F. Muell. 190
- torquata* Luehm. 170
- transcontinentalis* Maiden 161, 223
- (*E. oleosa* F. Muell. ex Miq. var.  
    *glauca* Maiden)
- trivalvis* Blakely 193
- uncinata* Turcz. 193
- wandoo* Blakely 196
- (*E. redunca* Schau var. *elata* Benth.)
- websterana* Maiden 220
- woodwardii* Maiden 201
- xanthonema* Turcz. 200
- (*E. redunca* Schau. var. *angustifolia*  
    Benth.)
- youngiana* F. Muell. 168
- (*E. pyriformis* Turcz. subsp.  
    *youngiana* (F. Muell.) Boomsma)



<i>Foeniculum</i> Mill.	291	<i>tenuifolia</i> Benth.	251
* <i>vulgare</i> Mill.	291	<i>trigonocarpa</i> F. Muell.	246
<i>Glischrocaryon</i> Endl.	244	<i>Haloragodendron</i> Orch.	245
<i>aureum</i> (Lindl.) Orch.	244	<i>glandulosum</i> Orch.	245
( <i>Loudonia aurea</i> Lindl.)		<i>racemosum</i> (Labill.) Orch.	245
var. <i>angustifolium</i> (Nees) Orch.	244	( <i>Haloragis racemosa</i> Labill.	
<i>flavescens</i> (Drumm. ex Hook.) Orch.	244	var. <i>angustifolia</i> Schindl.)	
<i>roei</i> Endl.	245	<i>Homalosciadium</i> Domin	286
<i>Gonocarpus</i> Thunb.	252	<i>homalocarpum</i> (F. Muell.) Hj. Eichler	286
<i>benthamii</i> Orch.	254	( <i>H. verticillatum</i> (Turcz.) Domin)	
( <i>Haloragis rotundifolia</i> Benth.)		<i>Hydrocotyle</i> L.	266
<i>confertifolius</i> (F. Muell.) Orch.	252	<i>alata</i> R. Br. ex A. Rich.	272
var. <i>helmsii</i> Orch.	252	<i>belpharocarpa</i> F. Muell.	273
<i>cordiger</i> (Fenzl.) Endl. ex Nees	253	* <i>bonariensis</i> Lamk.	268
<i>diffusus</i> (Diels) Orch.	256	<i>callicarpa</i> Bunge	269
<i>hexandrus</i> (F. Muell.) Orch.		<i>capillaris</i> F. Muell. ex Klatt	271
subsp. <i>hexandrus</i>	257	<i>corynophora</i> F. Muell.	269
subsp. <i>integrifolius</i> (Schindl.) Orch.	258	<i>diantha</i> DC.	272
subsp. <i>serratus</i> (Schindl.) Orch.	257	<i>hirta</i> R. Br. ex A. Rich.	267
<i>intricatus</i> (Benth.) Orch.	256	<i>hispidula</i> Bunge	270
<i>nodulosus</i> Nees	252	var. <i>tenella</i> Benth.	270
<i>paniculatus</i> (R. Br. ex Benth.) Orch.	256	<i>lemnoides</i> Benth.	272
<i>pithyoides</i> Nees	254	<i>medicaginoides</i> Turcz.	268
<i>pusillus</i> (R. Br. ex Benth.) Orch.	255	<i>muriculata</i> Turcz.	268
( <i>Haloragis lanceolata</i> R. Br. ex		<i>pilifera</i> Turcz.	271
Benth.)		var. <i>glabrata</i> Benth.	271
<i>pycnostachyus</i> (F. Muell.) Orch.	253	<i>plebeya</i> R. Br. ex A. Rich.	267
<i>rudis</i> (Benth.) Orch.	255	<i>rugulosa</i> Turcz.	271
<i>scordioides</i> (Benth.) Orch.	255	<i>scutellifera</i> Benth.	269
<i>simplex</i> (R. Br. ex Britten) Orch.	254	<i>tetragonocarpa</i> Bunge	273
<i>trichostachyus</i> (Benth.) Orch.	257	<i>trachycarpa</i> F. Muell.	270
HALORAGACEAE	242	<i>Hypocalymma</i> Endl.	5, 88
<i>Haloragis</i> Forst. et Forst. f.	246	<i>angustifolium</i> Endl.	90
<i>aculeolata</i> Benth.	250	var. <i>densiflorum</i> Benth.	90
<i>acutangula</i> F. Muell. forma <i>occidentalis</i>		<i>cordifolium</i> (Lehm.) Schau.	91
Orch.	247	<i>ericifolium</i> Benth.	90
<i>brownii</i> (Hook. f.) Schindl.	251	<i>linifolium</i> Turcz.	90
( <i>H. breviloba</i> Schindl.)		<i>longifolium</i> F. Muell.	89
<i>digyna</i> Labill.		<i>myrtifolium</i> Turcz.	91
( <i>H. mucronata</i> (Nees) Benth.)	248	( <i>H. hypericifolium</i> Benth.)	
<i>dura</i> Orch.	249	<i>phillipsii</i> Harv.	91
<i>foliosa</i> Benth.	250	<i>puniceum</i> C. A. Gardn.	89
<i>gossei</i> F. Muell.	246	<i>robustum</i> Endl.	88
<i>hamata</i> Orch.	248, 250	<i>speciosum</i> Turcz.	91
<i>odontocarpa</i> F. Muell.		( <i>H. boroniaceum</i> F. Muell. ex Benth.)	
forma <i>octoforma</i> Orch.	247	<i>strictum</i> Schau.	89
forma <i>pterocarpa</i> Orch.	247	var. <i>pedunculatum</i> Benth.	89
forma <i>rugosa</i> Orch.	249	<i>tetrapterum</i> Turcz.	90
<i>platycarpa</i> Benth.	249	<i>xanthopetalum</i> F. Muell.	91
<i>scoparia</i> Fenzl	250	<i>Kunzea</i> Reichb.	6, 97
		<i>affinis</i> S. Moore	100

- Kunzea* (contd)
- baxteri* (Klotzsch) Schau. 101
- ericalyx* F. Muell. 99
- jucunda* Diels 99
- micrantha* Schau. 98
- micromera* Schau. 99
- montana* (Diels) Domin 98
- (*K. recurva* Schau. var. *montana* Diels)
- pauciflora* Schau. 100
- preissiana* Schau. 100
- pulchella* (Lindl.) George 101
- var. *albiflora* S. Moore 101
- recurva* Schau. 98
- var. *melaleucoides* F. Muell. ex Benth. 98
- var. *praestans* (Schau.) Benth. 98
- spicata* S. Moore 97
- vestita* Schau. 98
- (*Metrosideros ericifolia* Sm.)
- (*Kunzea ericifolia* (Sm.) Benth.)
- villiceps* Schau. 99
- var. *glabrior* Domin 99
- Lamarchea* Gaudich. 7, 102
- hakeifolia* Gaudich. in Freyc. 102
- var. *brevifolia* George 102
- sulcata* George 102
- Leptospermum* Forst. et Forst. f. 5, 94
- crassipes* Lehm. 96
- ellipticum* Endl. 95
- erubescens* Schau. 97
- var. *stricta* Benth. 97
- fastigiatum* S. Moore 96
- firmum* (Schau.) Benth. 95
- floridum* (Schau.) Benth. 96
- laevigatum* (Gaertn.) F. Muell. 95
- maxwellii* S. Moore 95
- oligandrum* Turcz. 95
- (*L. podanthum* (F. Muell.) Diels)
- (*L. erubescens* Schau. var. *psilocalyx* Benth.)
- roei* Benth. 96
- sericeum* Labill. 97
- spinescens* Endl. 94
- Lhotskya* Schau. 4, 62
- acutifolia* Lindl. 63
- brevifolia* Schau. 62
- ciliata* (F. Muell.) Benth. 64
- ericoides* Schau. 62
- harvestiana* F. Muell. 63
- purpurea* F. Muell. 64
- violacea* Lindl. 64
- var. *merrelliana* F. Muell. et Tate 65
- Loudonia* Lindl. = *Glischrocaryon* Endl. 244
- Melaleuca* L. 7, 103
- acerosa* Schau. 123
- var. *bracteata* Benth. 123
- acuminata* F. Muell. 111
- adnata* Turcz. 110
- (*M. eleutherostachya* F. Muell. var. *abietina* Benth.) 110
- agathosmoides* C. A. Gardn. 112
- arenicola* S. Moore 131
- aspalathoides* Schau. 122
- basicephala* Benth. 112
- baxteri* Benth. 129
- blaeriifolia* Turcz. 106
- brachystachya* F. Muell. 133
- = *subfalcata* Turcz. 129
- bracteosa* Turcz. 129
- (*M. fasciculiflora* Benth.)
- calothamnoides* F. Muell. 105
- calycina* R. Br. in Ait. 109
- cardiophylla* F. Muell. 127
- var. *longistaminea* F. Muell. 106, 127
- var. *parviflora* Benth. 127
- ciliosa* Turcz. 116, 121
- citrina* Turcz. 124
- (*M. pungens* Schau. var. *obtusifolia* Benth.)
- cliffortioides* Diels 130
- coccinea* George 104
- concava* S. Moore 126
- concinna* Turcz. 117
- concreta* F. Muell. 124
- var. *brevifolia* Benth. 124
- conferta* Benth. 130
- conothamnoides* C. A. Gardn. 113
- cordata* Turcz. (*M. cordata* Benth.) 114
- var. *ovata* F. Muell. et Tate 114
- cucullata* Turcz. 107
- (*M. deltoidea* Benth.)
- cuneata* Turcz. 117
- cuticularis* Labill. 108
- var. *brachyphylla* Domin 108
- var. *obvallata* Domin 108
- cymbifolia* Benth. 108
- densa* R. Br. in Ait. 109
- var. *dorrien-smithii* Domin 109
- var. *pritzelii* Domin 109
- depauperata* Turcz. 128
- (*M. elachophylla* F. Muell.)
- depressa* Diels 121
- diosmifolia* C. R. P. Andr. 106

<i>Melaleuca</i> (contd)			
<i>dorrien-smithii</i> Domin	108	<i>radula</i> Lindl.	111
<i>eleutherostachya</i> F. Muell.	110	<i>rhaphiophylla</i> Schau.	133
<i>elliptica</i> Labill.	104	<i>scabra</i> R. Br. in Ait.	119
<i>eremaea</i> F. Muell.	119	<i>sclerophylla</i> Diels	115
( <i>M. psammophila</i> Diels)		<i>seorsiflora</i> F. Muell.	130
<i>exarata</i> F. Muell. = <i>suberosa</i> (Schau.)		<i>seriata</i> Lindl.	117
C. A. Gardn.	129	<i>sheathiana</i> W. V. Fitzg.	125
<i>fulgens</i> R. Br. in Ait.	104	<i>sparsiflora</i> Turcz.	109
<i>glaberrima</i> F. Muell.	133	<i>spathulata</i> Schau.	116
<i>globifera</i> R. Br. in Ait.	113	( <i>M. eriantha</i> Benth.)	
<i>glomerata</i> F. Muell.	124	<i>spicigera</i> S. Moore	131
<i>hamulosa</i> Turcz.	134	<i>steadmanii</i> C. A. Gardn.	104
<i>holosericea</i> Schau.	120	<i>striata</i> Labill.	114
<i>huegelii</i> Endl.	131	<i>suberosa</i> (Schau.) C. A. Gardn.	129
<i>incana</i> R. Br.	122	( <i>M. exarata</i> F. Muell.)	
<i>lanceolata</i> Otto	132	<i>subfalcata</i> Turcz.	133
( <i>M. curtifolia</i> Schldtl.)		( <i>M. brachystachya</i> F. Muell.)	
( <i>M. pubescens</i> Schau.)		<i>subtrigona</i> Schau.	119
<i>lateriflora</i> Benth.	129	<i>tenella</i> Benth.	125
var. <i>acutifolia</i> Benth.	129	<i>teretifolia</i> Endl.	128
var. <i>elliptica</i> Benth.	129	<i>thymoides</i> Labill.	114
<i>lateritia</i> Otto	105	( <i>M. spinosa</i> Lindl.)	
<i>laxiflora</i> Turcz.	132	<i>thyoides</i> Turcz.	107
( <i>M. crassifolia</i> Benth.)		<i>trichophylla</i> Lindl.	120
( <i>M. parviflora</i> Lindl.)		<i>tuberculata</i> Schau.	119
<i>leiocarpa</i> F. Muell.	120	<i>uncinata</i> R. Br. in Ait.	123, 128
<i>leiopyxis</i> F. Muell. ex Benth.	121	<i>undulata</i> Benth.	128
<i>leptoclada</i> Benth.	112	var. <i>minor</i> Benth.	117, 128
<i>leptospermoides</i> Schau.	116	<i>urceolaris</i> F. Muell. ex Benth.	122
<i>macronychia</i> Turcz.	105	var. <i>virgata</i> Benth.	122
<i>megacephala</i> F. Muell.	106	<i>viminea</i> Lindl.	126
<i>micromera</i> Schau.	107	var. <i>major</i> Benth.	126
<i>microphylla</i> Sm. in Rees	125	<i>violacea</i> Schau.	110, 112
<i>nematophylla</i> F. Muell.	118	var. <i>petiolata</i> Benth.	110
( <i>M. filifolia</i> F. Muell.)		<i>websteri</i> S. Moore.	111
<i>nesophila</i> F. Muell.	115	<i>Meziella</i> Schindl.	
<i>oldfieldii</i> F. Muell.	113, 115	<i>trifida</i> (Nees) Schindl.	258
<i>pauperiflora</i> F. Muell.	126	<i>Micromyrtus</i> Benth.	3, 41
<i>pentagona</i> Labill.	118	<i>drummondii</i> Benth. = <i>Thrypt. obovata</i>	
var. <i>latifolia</i> Benth.	118	Turcz. (genus name change to	
var. <i>subulifolia</i> Schau.	118	<i>Micromyrtus</i> foreshadowed)	43
<i>platycalyx</i> Diels	110	<i>elobata</i> (F. Muell.) Benth.	43
<i>polycephala</i> Benth.	116	<i>erichsenii</i> Hemsl.	
( <i>M. serpyllifolia</i> Turcz. non Dumort)		= <i>Thrypt. obovata</i> Turcz. (see note	
<i>polygaloides</i> Schau.	121	above)	43
<i>preissiana</i> Schau.	132	<i>flaviflora</i> (F. Muell.) F. Muell. ex Black	49
<i>psammophila</i> Diels		<i>hursthousi</i> W. V. Fitzg.	51
= <i>eremaea</i> F. Muell.	119	<i>hymenonema</i> (F. Muell.) C. A. Gardn.	42
<i>pulchella</i> R. Br. in Ait.	130	<i>imbricata</i> Benth.	43
<i>pungens</i> Schau.	123	<i>peltigera</i> S. Moore	42
<i>quadrifaria</i> F. Muell.	107	<i>racemosa</i> (F. Muell.) Benth.	44
		<i>rosea</i> (Pritzel) S. Moore	51

- Micromyrtus* (contd)
- sulphurea* W. V. Fitzg. 44
- trachycalyx* (F. Muell.) C. A. Gardn. 49
- Myriophyllum* L. 258
- amphibium* Labill. var. *latifolium* Schindl. 259
- drummondii* Benth. 260
- integrifolium* (Hook. f.) Hook. f. 260
- muelleri* Sond. ex Benth. 260
- propinquum* A. Cunn. 259
- tillaeoides* Diels 258
- verrucosum* Lindl. 259
- Neosciadium* Domin 274
- glochidiatum* (Benth.) Domin 274  
    (*Hydrocotyle glochidiata* Benth.)
- OENOTHERACEAE**
- (see **ONAGRACEAE**) 238
- Oenothera* L. 239
- \**acaulis* Cav. 241
- \**drummondii* Hook. 240
- \**erythrosepala* Borbás 240
- \**stricta* Ledeb. ex Link 241
- ONAGRACEAE** 238
- Pentapeltis* Bunge 281
- peltigera* (Hook.) Bunge 281
- silvatica* (Diels) Domin 281
- Phymatocarpus* F. Muell. 8, 141
- maxwellii* F. Muell. 141  
    (*P. sparsiflorus* (W. V. Fitzg.) C. A. Gardn.)
- porphyrocephalus* F. Muell. 141
- Pileanthus* Labill. 3, 52
- filifolius* Meisn. 52
- limacis* Labill. 52
- peduncularis* Endl. 52
- Platysace* Bunge 274
- anceps* (DC.) C. Norman 275
- cirrosa* Bunge 276
- commutata* (Turcz.) C. Norman 279
- compressa* (Labill.) C. Norman 275
- deflexa* (Turcz.) C. Norman 279
- dissecta* (Benth.) C. Norman 278
- eatoniae* (F. Muell.) C. Norman 280
- effusa* (Turcz.) C. Norman 279
- filiformis* (Bunge) C. Norman 276
- haplosciadea* (Benth.) C. Norman 274
- juncea* (Bunge) C. Norman 277
- maxwellii* (F. Muell.) C. Norman 280  
    (*Siebera oblonga* S. Moore)
- pendula* (Benth.) C. Norman 277
- ramosissima* (Benth.) C. Norman 277
- tenuissima* (Benth.) C. Norman 278
- teres* (Bunge) C. Norman 278
- xerophila* (Pritzel) L. A. S. Johnson 276
- Regelia* Schau. 8, 141
- ciliata* Schau. 142
- cymbifolia* (Diels) C. A. Gardn. 143
- inops* Schau. 142
- megacephala* C. A. Gardn. 142
- velutina* (Turcz.) C. A. Gardn. 141  
    (*R. grandiflora* Benth.)
- Schoenolaena* Bunge 294
- juncea* Bunge 294
- tenuior* Bunge 294
- Scholtzia* Schau. 4, 66
- capitata* F. Muell. ex Benth. 72, 74
- ciliata* F. Muell. 71
- decussata* W. V. Fitzg. (see note in text) 84
- drummondii* Benth. 86
- eatoniana* (Ewart et White) C. A. Gardn. 83
- involucrata* (Endl.) Druce 86  
    (*S. obovata* Schau.)
- laxiflora* Benth. 74
- leptantha* Benth. 71
- oligandra* F. Muell. ex Benth. 74
- parviflora* F. Muell. 72
- spathulata* (Turcz.) Benth. 73
- teretifolia* Benth. 81
- uberiflora* F. Muell. 74
- umbellifera* F. Muell. 71
- Thryptomene* Endl. 3, 41
- appressa* C. R. P. Andr. 48
- aspera* Pritzel 46
- australis* Endl. 44
- baeckeacea* F. Muell. 48  
    (*T. micrantha* (DC.) C. A. Gardn.)
- denticulata* (F. Muell.) Benth. 47
- dielsiana* Pritzel 45
- hyporhytis* Turcz. 49
- johnsonii* F. Muell. 46
- kochii* Pritzel 50
- maisonneuwei* F. Muell. 51
- mucronulata* Turcz. 45
- obovata* Turcz. (genus name change to *Micromyrtus* foreshadowed) 43  
    (*Micromyrtus drummondii* Benth.)  
    (*M. erichsenii* Hemsl.)

<i>Thryptomene</i> (contd)		<i>helmsii</i> S. Moore	33
<i>prolifera</i> Turcz.	45	( <i>V. adenocalyx</i> Diels)	
( <i>T. davisiae</i> Diels)		<i>huegelii</i> Endl.	40
<i>racemulosa</i> Turcz.	47	<i>hughanii</i> F. Muell.	32
<i>saxicola</i> (A. Cunn.) Schau.	47	<i>humilis</i> Benth.	41
<i>stenocalyx</i> F. Muell.	46	<i>insignis</i> Endl.	29
<i>stenophylla</i> Pritzel	48	<i>lehmannii</i> Schau.	30
<i>strongylophylla</i> F. Muell. ex Benth.	48	<i>lepidophylla</i> F. Muell.	28
<i>tenella</i> Benth.	50	<i>lindleyi</i> Schau.	32
<i>tuberculata</i> Pritzel	50	<i>minutiflora</i> Turcz.	36
<i>urceolaris</i> F. Muell.	50	<i>mittelliana</i> C. A. Gardn.	30
<i>Trachymene</i> Rudge	286	<i>monadelphica</i> Turcz.	29
<i>anisocarpa</i> (Turcz.) B. L. Burtt	289	<i>muellerana</i> Pritzel	27
<i>caerulea</i> Grah.	288	<i>multiflora</i> Turcz.	39
var. <i>leucopetala</i> F. Muell. ex Benth.	288	<i>nitens</i> (Lindl.) Schau.	33
<i>croniniana</i> F. Muell.	287	<i>oculata</i> Meisn.	26
<i>cyanopetala</i> (F. Muell.) Benth.	287	<i>ovalifolia</i> Meisn.	26
var. <i>ciliatula</i> Domin	287	<i>oxylepis</i> Turcz.	41
<i>elachocarpa</i> (F. Muell.) B. L. Burtt	288	<i>patens</i> George	33
<i>glaucifolia</i> (F. Muell.) Benth.	289	<i>penicillaris</i> F. Muell.	41
<i>juncea</i> S. Moore	288	<i>pennigera</i> Endl.	31, 34
<i>ornata</i> (Endl.) Druce	286		
<i>pilosa</i> Sm. in Rees	287	<i>pentandra</i> Turcz.	32
var. <i>preissiana</i> Benth.	287	(see Note under <i>V. picta</i> in text)	
<i>Uldinia</i> Black	286	<i>pholidophylla</i> F. Muell.	31
<i>ceratocarpa</i> (W. V. Fitzg.) N. T. Burb.	286	<i>picta</i> Endl.	32
( <i>Hydrocotyle ceratocarpa</i>		<i>plumosa</i> (Desf.) Druce	37
W. V. Fitzg.)		( <i>V. fontenesii</i> DC.)	
UMBELLIFERAE (see APIACEAE)	261	var. <i>brevifolia</i> Domin	37
		var. <i>grandiflora</i> Benth.	37
<i>Verticordia</i> DC.	2, 25	<i>polytricha</i> Benth.	38, 40
<i>acerosa</i> Lindl.	35	<i>preissii</i> Schau.	35
<i>brachypoda</i> Turcz.	39	<i>pritzelii</i> Diels	30
( <i>V. stylotricha</i> Diels)		<i>rennieana</i> F. Muell.	31
<i>brownii</i> (Desf.) DC.	38, 40	<i>roei</i> Endl.	28, 29
<i>chrysantha</i> Endl.	35	<i>serrata</i> (Lindl.) Schau.	34
<i>chrysostachys</i> Meisn.	28	<i>sieberi</i> Diesing ex Schau.	37
<i>densiflora</i> Lindl.	36	<i>spicata</i> F. Muell.	27
<i>drummondii</i> Schau.	31	<i>staminosa</i> C. A. Gardn. et George	35
<i>etheliana</i> C. A. Gardn.	27	<i>stelluligera</i> Meisn.	36
<i>fastigiata</i> Turcz.	39	<i>stenopetala</i> Diels	37
( <i>V. conferta</i> Benth.)		<i>stylosa</i> Turcz.	40
<i>fimbrilepis</i> Turcz.	34	<i>Wehlia</i> F. Muell.	4, 62
<i>forrestii</i> F. Muell.	27	<i>aurea</i> C. A. Gardn.	63
<i>grandiflora</i> Endl.	34	<i>coarctata</i> F. Muell.	65
<i>grandis</i> Drumm. in Hook.	26	<i>grandiflora</i> C. A. Gardn.	64
<i>habrantha</i> Schau.	29	<i>staminosa</i> F. Muell.	65
<i>harveyi</i> Benth.	36	<i>thryptomenoides</i> F. Muell.	65
var. <i>nudipetala</i> Benth.	37	<i>Xanthosia</i> Rudge	280
<i>helichrysantha</i> F. Muell. ex Benth.	38	<i>atkinsoniana</i> F. Muell.	285



<i>candida</i> (Benth.) Steud.	282	<i>pusilla</i> Bunge	283
var. <i>subtrilobata</i> Ostf.	282	var. <i>glabrata</i> Benth.	284
<i>ciliata</i> Hook.	283	<i>rotundifolia</i> DC.	284
<i>fruticulosa</i> Benth.	284	var. <i>hypoleuca</i> Diels	285
<i>hederifolia</i> Benth.	282	<i>singuliflora</i> F. Muell.	280
<i>huegelii</i> (Benth.) Steud.	283	<i>tasmanica</i> Domin	284
<i>peduncularis</i> Benth.	285	<i>tomentosa</i> George	285

## Names of authors

Note. Only those authors not already listed in Part IV [q.v.] are included here, except for ■ few cases where it was felt desirable to correct or update information.

Abbreviations and contractions as used in Index of Scientific Names.

C. R. P. Andr.	C. R. P. Andrews, England/W. Aust., 1870-1951
Arn.	G. A. W. Arnott, Gt. Britain, 1799-1868
Avé-Lall.	J. L. E. Avé-Lallement, Germany, 1803-1867
Betche	E. Betche, Australia (Sydney), 1851-1913
Bitter	F. A. G. Bitter, Germany, 1873-1927
Blakely	W. F. Blakely, Australia (Sydney), 1875-1941
Blaxell	D. F. Blaxell, Australia (Sydney), contemporary
Bonpl.	A. J. A. Bonpland, France/Argentina, 1773-1858
Boomsma	C. D. Boomsma, Australia (Adelaide), contemporary
Borbás	V. von Borbás, Hungary, 1844-1905
Britten	J. Britten, England, 1846-1924
Brooker	M. I. H. Brooker, Australia (Canberra), contemporary
Bunge	A. A. von Bunge, Germany/Russia, 1803-1890
N. T. Burb.	N. T. Burbidge, Australia (Perth, Canberra), 1912-1977
B. L. Burt	B. L. Burt, England, contemporary
D. J. Carr	D. J. Carr, Gt. Britain/Australia (Canberra), contemporary
S. G. M. Carr	S. G. M. Carr, Australia (Canberra), contemporary
Cayzer	A. Cayzer, Gt. Britain/Australia (Perth; Brisbane)
Chippendale	G. M. Chippendale, Australia (Canberra), contemporary
Colla	L. A. Colla, 1766-1848
A. Cunn.	A. Cunningham, Gt. Britain/Australia (Sydney), 1791-1839
Decne.	J. Decaisne, France, 1807-1882
Dehn.	F. Dehnhardt, Germany, 1787-1870
Diels	L. Diels, Germany, 1874-1945
Domin	K. Domin, Czechoslovakia, 1882-1952
Donn	J. Donn, 1758-1813
J. Drumm.	J. Drummond, Gt. Britain/Australia (Perth), 1784-1863
Diesing	C. M. Diesing, Germany, 1800-1867
Engelhorn	T. E. Engelhorn, New Zealand, contemporary
Ewart	A. J. Ewart, England/Australia (Melbourne), 1872-1937
Fenzl	E. Fenzl, Austria, 1808-1879
Fischer	F. E. L. von Fischer, Germany/Russia, 1782-1854
W. V. Fitzg.	W. V. Fitzgerald, Australia (W.A. 1902-1906), d. 1929
Frey.	L. C. Desaulses de Freycinet, France, 1779-1842
Glück	C. M. H. Glück, Germany, 1868-1940
Harv.	W. H. Harvey, Gt. Britain, 1811-1866
Hochr.	B. P. G. Hochreutina, Switzerland, 1873-1959
Hoffm.	G. F. Hoffman, Germany, 1761-1826
Hornem.	J. W. Hornemann, Denmark, 1770-1841
Jacq.	N. J. von Jacquin, Holland/Austria, 1727-1817

L. A. S. Johnson	L. A. S. Johnson, Australia (Sydney) , contemporary
Kessell	L. S. Kessell, Australia (Perth; E.S.) , 1897-1979
Kipp.	R. Kippist, 1812-1882
T. Kirk	T. Kirk, England/N. Zealand, 1828-1898
Klatt	F. W. Klatt, Germany, 1825-1897
Klotzsch	J. F. Klotzsch, Germany, 1825-1897
Lag.	M. Lagaska
Lamk.	J. B. P. A. M. Lamarck, France, 1744-1829
Ledeb.	C. F. von Ledebour, Germany, 1785-1851
Lehm.	J. G. C. Lehmann, Germany, 1792-1860
L'Hérit.	C. L. L'Héritier, France, 1746-1800
Link	J. H. F. Link, Germany, 1767-1851
Luehm.	J. G. C. Leuhmann, Germany/Australia (Melbourne) , 1843-1904
Mansf.	R. Mansfeld, Germany, 1907-1960
Meisn.	C. F. Meisner (or Meissner) , Germany, 1800-1874
Mildbr.	J. Mildbraed, Germany, 1879-1954
Nannf.	J. A. Nannfeldt, Sweden, 1904-
Nees	C. G. D. Nees van Esenbeck, Germany, 1776-1858
Nied.	F. J. Niedenzu, Germany, 1857-1937
C. Norman	C. Norman, England, 1872-1947
Orch.	A. E. Orchard, Australia (Adelaide, Hobart) , contemporary
Otto	F. Otto, Germany, 1782-1856
Pers.	C. H. Persoon, France, c. 1762-1836
Pet.-Thou.	L. M. A. du Petit-Thouars, France, 1758-1831
Podger	F. D. Podger, Australia (Perth) , contemporary
Preiss	J. A. L. Preiss, Germany/Australia (Perth, 1838-1842) , 1811-1883
Raven	P. H. Raven, U.S.A./N. Zealand. contemporary
Rees	A. Rees, England, 1743-1825
Reichb.	H. G. L. Reichenbach, Germany, 1793-1879
Rudge	F. Rudge, Gt. Britain, 1763-1846
Sarg.	O. H. Sargent, Australia (W. Aust., York) , 1880-1952
Schau.	J. C. Schauer, Germany, 1813-1848
Schindl.	A. K. Schindler, Germany, 1879-1964
Schltldl.	D. F. L. von Schlechtendahl, Germany, 1794-1866
Ser.	N. C. Seringe, France, 1776-1858
Short	P. Short, Australia (Adelaide) , contemporary
Sprague	T. A. Sprague, Gt. Britain, 1877-1958
Steedman	H. Steedman, Gt. Britain/Australia (Perth) , c. 1866-1953
Steetz	J. Steetz, Germany, 1804-1862
Steud.	E. G. Steudel, Germany, 1783-1856
Urban	I. Urban, Germany, 1848-1931
F. W. Wakef.	F. W. Wakefield, Australia (Perth)
N. A. Wakef.	N. A. Wakefield, Australia (Melbourne) , 1919-1972









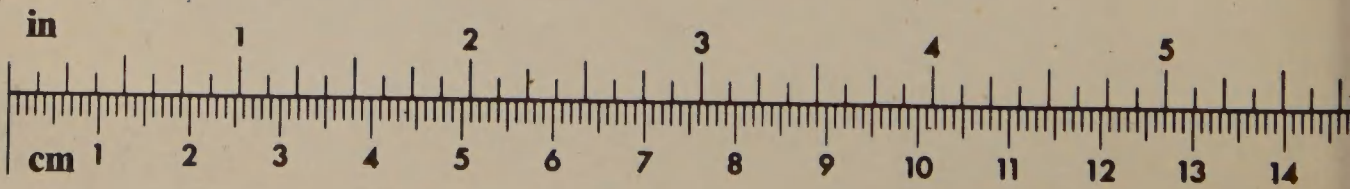


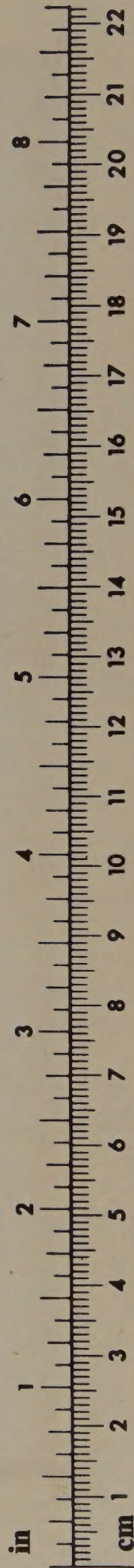












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